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Environmental Restoration Program

Monthly Report for June 1993

Rocky Flats Office

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EXECUTIVE SUMMARY

SIGNIFICANT ACTIVITIES AND ACHIEVEMENTS FOR JUNE 1993

A meeting was held among the regulatory agencies and Department of Energy (DOE) to update all parties on the Operable Unit (OU) 1 Remedial Investigation (RI) and the Interim Remedial Action (IRA) (Phase III RFI/RI). DOE requested these monthly update meetings to keep the lines of communication open; all parties feel the meetings are productive. After the update, a tour of the 881 Hillside wetlands was given. Growth of the wetland vegetation was examined and the regulatory agencies were pleased with the work accomplished. The Environmental Protection Agency (EPA) agreed to construction of wetlands after the loss of some wetlands associated with the construction of the OU 1 IM/IRA French drain. The wetlands area was completed at the end of May 1993. Only ongoing monitoring activities remain.

Work on the Feasibility Study (FS) in OU 1 881 Hillside was started with a re-evaluation of the list of remediation alternatives based on the revised interpretations of the nature and extent of contamination in the Final RI. The majority of the FS work cannot be resumed until the revision of the risk assessment has progressed enough to determine the final contaminants of concern (COC) list.

The OU 2 Draft Soil Vapor Extraction Pilot Test Plan for Site #2 was received by the regulatory agencies and DOE on June 24; 1993. This was an Interagency Agreement (IAG) milestone. This test plan is part of the subsurface IM/IRA and the second of three sites to be investigated.

In OU 2, 903 Pad, Mound, and East Trenches Area, the first phase of the bedrock program field work is complete. All pilot boreholes, A-series wells, and both source boreholes are complete. Of the six wells that were tested, results were received for two wells. The results from one of the wells detected nine parts-per-billion (ppb) trichloroethylene (TCE), and on June 25, 1993, a deeper B-series well was drilled to conduct further testing. After the results on the remaining A-series wells have been received, a determination will be made on how many additional B-series wells will be required.

The DOE reviewed the OU 2 Surface Water IM/IRA Phase II Draft Treatability Report during June 1993. It is anticipated that the July 13, 1993, delivery date to the regulatory agencies will be met. The document specifies the determination of the applicability of the treatment technology, quantification of major operating parameters, evaluation of performance relative to meeting chemical-specific ARARs, and reevaluation of capital and operations costs. This report was originally due on May 21, 1993, and was given an extension by the regulatory agencies because of report format and scope changes desired by the regulatory agencies and DOE.

At a OU 4 Solar Ponds dispute resolution meeting, the regulator agencies made a significant, new proposal. The meeting was scheduled to discuss the extension of two Phase I RFI/RI report milestones that had only been partially extended by the regulatory agencies. The regulatory agencies' basic proposal was to trade the two milestones for an acceleration of the Phase I IM/IRA pond closure schedule as currently included in the IAG. Acceleration of the IM/IRA requires concurrent acceleration of the removal of the sludge from the ponds.

Cold testing of OU 4 Solar Ponds Building 910 evaporators identified many leaks, especially during thermal cycling and in metal-to-plastic fittings. The leaks were repaired and questions involving minor leaks resolved using the permit language in the IM/IRA. Resolution of the issue of leaks solves a problem that had threatened to delay the scheduled acceptance phase operation. The acceptance phase is now proceeding on schedule. The acceptance phase qualification test was completed June 24, 1993, thus meeting the milestone date of June 28, 1993.

At the request of Congressman D. Skaggs, DOE and EG&G management personnel met with him on June 1, 1993. A review of the Environmental Restoration Program and Interagency Agreement status was presented. A long-term strategy including acceleration of the cleanup of the Rocky Flats Plant (RFP) was discussed.

The Environmental Restoration Program finished the fiscal year (FY) 1994 draft work packages in June 1993. During the week of June 25, 1993, RFP management reviewed the work scope, staffing plans, and budgets to ensure consistency with current planning. These draft work packages were developed to coincide with the most recent ER Five-Year Plan (FYP), will be multi-year, and will allow the estimation of total costs through the Record of Decision (ROD).

IAG Performance Indicators for ER Monthly Report

Number of IAG Milestones to Date	Current FY93 (10/1/92 - 9/30 /93)	Since IAG Signed (1/22/91)
Scheduled (including approved extensions)	15	91
Met	10	66
Extensions Granted	7	22
Extensions Denied	1	1
In Dispute - OU 4 Phase I Draft/Final Report	1	1
Remaining this FY93 (to 9/30/93)	6	n/a

Deliverable in Review by Regulators	Project	Date Submitted
	OU 13 Final Phase I RFI/RI Work Plan	10 Mar 93
	OU 14 Final Phase I RFI/RI Work Plan	10 Oct 92

Field Work Currently Underway	Project	Scheduled Complete
	OU 2	23 Aug 93
	OU 3	13 Jul 93
	OU 4	Jan 96*
	OU 5	15 Jul 93
	OU 7	30 Apr 93

*for all field work phases

IM/IRA Status	Gallons Treated
OU 1 881 Hillside Treatment	1.4M
OU 2 903 Pad Water Treatment	16.4M
OU 4	Project is in pre-operations phase

IAG Document Deliverables Due Next 6 months	Due Date	Expected Date
OU 1 Final Phase III RFI/RI Report	15 Nov 93	15 Nov 93
OU 2 Draft Treatability Test Report (RRS)	13 Jul 93	13 Jul 93
OU 2 Final Treatability Test Report (RRS)	08 Sep 93	08 Sep 93
OU 4 Draft Phase I RFI/RI Report	14 Sep 93	14 Sep 93
OU 1 Draft PP	27 Sep 93	30 Sep 93
OU 2 Final Phase II RFI/RI Report	09 Aug 93	06 Jun 94
OU 2 Draft CMS/FS Report	04 Nov 93	30 Oct 96
OU 3 Draft Phase I RFI/RI Report	16 Jul 93	02 Nov 93
OU 3 Final Phase I RFI/RI Report	13 Dec 93	20 Jul 94
OU 5 Draft Phase I RFI/RI Report	30 Nov 93	09 Feb 95
OU 6 Draft Phase I RFI/RI Report	04 Aug 93	21 Oct 94
OU 7 Draft Phase I RFI/RI Report	12 Oct 93	20 Dec 93

Overdue Deliverables	Due Date	Expected Date
OU 2 Draft RFI/RI Report	12 Mar 93	06 Jan 94

PROBLEMS AND PROGRAMMATIC ISSUES

Procurement Status

A projected Procurement Plan was completed on June 15, 1993, by Procurement Support. This plan is in response to a DOE letter dated February 17, 1993, referencing the Contractor Purchasing System Review (CPSR), System Criterion 4, and the Advanced Purchasing Planning System. This report addresses all Environmental Restoration (ER) requests for future capital equipment needs over $25,000 and subcontractor needs over $100,000. This report will be submitted to Procurement on a quarterly basis with the next submittal due on October 15, 1993.

Contractor Technical Representative (CTR) training for both DOE and EG&G personnel is set for July 21, 1993. An additional session is planned for August 1993. These sessions are designed to help the CTR better understand the process and procedures behind subcontracts and to discuss any concerns DOE and EG&G personnel may have with the system.

EG&G Rocky Flats Environmental Restoration Management (ERM) will be holding an open forum with all of the Master Task Subcontract (MTS) awardees on July 8, 1993. Program Support will be involved in coordinating the symposium. The following topics will be addressed:

- Rocky Flats Initiative to shorten the IAG schedule and complete clean up earlier
- Health and Safety issues/concerns
- Five-Year Plan (FYP) funding targets
- Fiscal year (FY)1994 planning efforts
- Union negotiations and possible impacts

At the end of the session, an open discussion will be held to address any concerns or questions relating to Rocky Flats issues.

Other

DOE developed a letter to the regulatory agencies requesting a schedule extension for the OU 3 Draft & Final Phase I RFI/RI Reports. The Draft RI Report is due to the regulatory agencies on July 16, 1993, and this date will not be met because of delays in obtaining permission to collect samples on offsite private land. The DOE has requested that the IAG milestone date of July 16, 1993, for the Draft Phase I RFI/RI Report be extended to February 14, 1994, and the IAG milestone date of December 13, 1993, for the Final Phase I RFI/RI Report be extended to October 21, 1994.

The OU 4 IAG milestone date for the submittal of the Draft Phase I RFI/RI Report will not be met, and the 79-day extension to September 14, 1993, granted by CDH, is inadequate to complete the report. The regulatory agencies and DOE are negotiating to accelerate cleanup on this project.

The OU 6, Walnut Creek, Draft Phase I RFI/RI Report, due on August 4, 1993, and the Final Phase I RFI/RI Report, due on January 7, 1994, will require schedule extensions because of delays incurred before starting field operations. DOE is preparing an extension request to be submitted to the regulatory agencies.

The OU 7 Phase I RFI/RI Work Plan may be delayed because a decision has not been made on what future land use scenario to use for the Baseline Risk Assessment (BRA). Delayed decisions on future land use may postpone completion of assessment activities in other OUs as well.

DOE has stated that its position on the "residential use scenario" for the risk assessments for the industrial area (IA)/OUs will not be used. The regulatory agencies have stated that the residential use scenario must be used for the risk assessments for the IA/OUs. This issue needs to be resolved before approval of the OU 8 Phase I RFI/RI Report will be granted.

Submittal of OU 11 Draft and Final Phase I RFI/RI Reports will require extensions as a result of assessment activity delays.

A major concern arising from the OU 1 RFI/RI report deals with IAG language requiring DOE to assess exposure and risk at the source. The term "source" is not defined in the IAG or elsewhere in applicable regulatory or guidance. It is believed that this requirement comes from CDH's desire to enforce RCRA regulatory requirements through the risk assessment. Procedurally, EG&G believes that risk assessment at the source as suggested by CDH and EPA could result in double or triple the currently monthly budgeted HHRA costs.

EG&G is investigating the issue and will report to DOE by early August 1993 on a proposed position to take. Preliminary work suggests that a source should be defined as an IHSS. This will result in higher risk assessment costs.

NEAR-TERM IAG MILESTONES

OU	Milestone Description	Due to EPA/CDH	Status
2	Submit Draft Phase II RFI/RI Report	12 Mar 93	Delinquent
2	Submit Draft Treatability Test Report	18 May 93	Extended to 13 Jul 93
4	Submit Draft Phase I RFI/RI Report	21 May 93	Extended to 14 Sep 93
2	Submit Subsurface Test Plan Site #2	24 June 93	Complete
2	Submit Final Treatability Test Report	13 Jul 93	Extended to 8 Sep 93
3	Submit Draft Phase I RFI/RI Report	16 Jul 93	Extension request submitted
6	Submit Draft Phase I RFI/RI Report	4 Aug 93	*
2	Submit Final Phase I RFI/RI Report	9 Aug 93	*
7	Submit Draft Phase I RFI/RI Report	12 Oct 93	*
4	Submit Final Phase I RFI/RI Report	18 Oct 93	Extended to 14 Feb 94
2	Submit Draft CMS/FS Report	4 Nov 93	*
1	Submit Final Phase III RFI/RI Report	04 Jan 93	Extended to 15 Nov 93
5	Submit Draft Phase I RFI/RI Report	30 Nov 93	*
3	Submit Final Phase I RFI/RI Report	13 Dec 93	Extension request submitted
1	Submit Draft Proposed Plan	27 Sep 93	Extension request being prepared
1	Submit Final Proposed Plan	4 Jan 94	*
6	Submit Final Phase I RFI/RI Report	7 Jan 94	*
1	Submit Draft CMS/FS Report	03 Mar 94	Exended to 11 Feb 94
8	Submit Draft Phase I RFI/RI Report	14 Feb 94	*
7	Submit Final Phase I RFI/RI Report	16 Mar 94	*
9	Submit Final Phase I RFI/RI Report	11 Apr 94	
4	Submit Draft Phase I Proposed IM/IRA Decision Document	14 Apr 94	*
12	Submit Draft Phase I RFI/RI Report	20 Apr 94	*
4	Submit Draft Phase II Work Plan	22 Apr 94	*
5	Submit Final Phase I RFI/RI Report	3 May 94	*
1	Submit Draft Responsiveness Summary	6 May 94	*
2	Submit Final CMS/FS Report	10 May 94	*
2	Submit Draft Proposed Plan	10 May 94	
8	Submit Final Phase I RFI/RI Report	12 Jul 94	*
15	Submit Draft Phase I RFI/RI Report	1 Aug 94	On schedule
1	Submit Final CMS/FS Report	3 Aug 94	*
1	Submit Final Responsiveness Summary	3 Aug 94	*
1	Submit Draft CAD/ROD	3 Aug 94	*
13	Submit Draft Phase I RFI/RI Report	8 Aug 94	*
2	Submit Final Proposed Plan	9 Aug 94	*
10	Submit Draft Phase I RFI/RI Report	25 Aug 94	*
9	Submit Final Phase I RFI/RI Report	6 Sep 94	*
4	Submit Draft Phase I Proposed IM/IRA Decision Document	14 Apr 94	*
7	Submit Draft Phase II RFI/RI Work Plan	13 Sep 94	*
12	Submit Final Phase I RFI/RI Report	15 Sep 94	*
4	Submit Final Phase II RFI/RI Work Plan	19 Sep 94	*
11	Submit Draft Phase I RFI/RI Report	20 Sep 94	*

*Behind original IAG schedule; extension required.

SECTION 1. INTRODUCTION

This monthly status report presents the current status and technical achievements of the Rocky Flats Environmental Restoration Program for June 1993. This program implements the Interagency Agreement (IAG) among the U.S. Department of Energy, the U.S. Environmental Protection Agency (EPA), and the State of Colorado to investigate, assess, and remediate, where necessary, contaminated areas at or adjacent to DOE's Rocky Flats Plant in Golden, Colorado. This agreement was signed on January 22, 1991. The work is being performed for DOE by EG&G Rocky Flats, Inc.

Section 2.1 of this report highlights significant achievements and summarizes the milestones completed during June 1993. Section 2.2 presents any major unresolved issues of the program. Technical progress, schedule status, and milestone status for each Operable Unit (OU) as well as other program activities are presented in Section 3. Section 4 contains the schedules for routine environmental sampling as required by Paragraph 210 of the IAG. Section 5 contains a list which identifies the contractors and subcontractors performing work on the program as required by Paragraph 13 of the IAG.

SECTION 2. PROJECT STATUS

2.1 OU 1 - 881 HILLSIDE AREA

The alluvial ground water at the 881 Hillside Area, located north of Woman Creek in the southeast section of RFP, was contaminated in the 1960s and 1970s with solvents and radionuclides. The area is approximately 2 miles from the eastern, outer edge of the plant's buffer zone at Indiana Street. The various Individual Hazardous Substance Sites (IHSS) that make up OU 1 were being investigated and treated as high-priority sites because of potentially elevated concentrations of organic compounds in the near-surface ground water and the proximity of the contamination to a drainage system leading to an offsite drinking water supply. The selected Interim Remedial Action (IRA) at OU 1 involved construction of an underground drainage system called a French drain that intercepts and contains near-surface ground water flowing from the OU 1 area. The near-surface water is treated at the 891 treatment facility, designed for this purpose, and released onsite into the South Interceptor Ditch (SID) along side Woman Creek. Water collected from this ditch undergoes a secondary analysis prior to release. IRA construction was completed in April 1992. The Remedial Investigation and Feasibility Study (RI/FS) to determine the final remedial action are continuing in parallel with operation of the IRA.

2.1.1 OU 1 ASSESSMENT

Scope of Work Changes This Period

None

Technical Approach Changes This Period

None

IAG Milestone Accomplishments

Submit Draft Phase III RFI/RI Work Plan	06 Feb 90
Submit Final Phase III RFI/RI Work Plan	31 Oct 90
Submit Draft Phase III RFI/RI Report	28 Oct 92

Future IAG Milestones Through FY94

Milestone Name	IAG Date Scheduled	Extension Status	Planned Accomplishment Date
Submit Final Phase III RFI/RI Report	4 Jan 93	15 Nov 93	15 Nov 93
Submit Draft CMS/FS Report	31 Mar 93	11 Feb 94	31 Mar 94
Submit Final CMS/FS Report	27 Sep 93	03 Aug 94	30 Sep 94
Submit Draft PP	27 Sep 93		30 Sep 94
Submit Final PP	04 Jan 94		17 May 95
Submit Draft Responsiveness Summary	06 May 94		02 Nov 95
Submit Final Responsiveness Summary	03 Aug 94		12 Apr 96
Submit Draft CAD/ROD	03 Aug 94		12 Apr 96

June Work Activity Status

A meeting was held among the regulatory agencies and DOE to update all parties on the OU 1 Remedial Investigation (RI) and the Interim Remedial Action (IRA) (Phase III RCRA Facilities Investigation [RFI]/RI). DOE requested these monthly update meetings to keep the lines of communication open; all parties feel the meetings are productive. After the update, a tour of the 881 Hillside wetlands was given. Growth of the wetland vegetation was examined and the regulatory agencies were pleased with the work accomplished. The construction of the new wetlands was agreed to by the Environmental Protection Agency (EPA) after the loss of some wetlands associated with the construction of the Operable Unit (OU) 1 Interim Measure/Interim Remedial Action (IM/IRA) French drain. The wetlands area was completed at the end of May 1993. Only ongoing monitoring activities remain.

Meetings were held among the regulatory agencies and DOE to discuss the revisions and reinterpretations of the Phase III RFI/RI work. The final comment responses for the draft RI Report are being collated and sent to the regulatory agencies. Revision of the report and production of the final document are on schedule.

Meetings were held during the month with the regulatory agencies and the DOE on the Final RI report. One meeting was a presentation and discussion of the reinterpretation of the OU 1 geology, hydrology, site conceptual model, and nature and extent of contamination. Data sets for OU 1 and data compilation issues were also discussed. The other meeting was to discuss the contaminant decision tree and the process of defining or eliminating contaminants as site (OU 1) contaminants. The OU 1 contaminants defined through this process were presented for regulatory agency input. The regulatory agencies responded favorably to both meetings and the progress on the Final RI, and they will relay any detailed comments to DOE. A contract negotiation was completed for the ecological risk assessment contractor. The majority of the chemical data from the hotspot sampling was received from the laboratory. This data will be incorporated into the Final RI.

Work on the Feasibility Study (FS) was started with a re-evaluation of the list of remediation alternatives based on the revised interpretations of the nature and extent of contamination in the Final RI. The majority of the FS work cannot be resumed until the revision of the risk assessment has progressed enough to determine the final contaminants of concern (COC) list.

Technical Memoranda

Project: **OU 1 - 881 Hillside**

TM #10
TM Title: Preliminary Remediation Goals
TM Status: Submitted draft TM to DOE in February 1993. DOE comments were completed for Appendix A of TM #10 in May 1993. The remainder of effort on TM #10 is on hold pending resolution of regulatory comments on the Draft RI Report.

Planned Work for July

- Complete toxicity screen for the Human Health Risk Assessment (HHRA).
- Complete and present the final HHRA COCs list to the regulatory agencies and proceed with the completion of the revised HHRA.
- Complete and present the final Ecological Risk Assessment (ERA) COCs list to the regulatory agencies and proceed with the completion of the revised ERA.
- Complete Section Four, *Nature and Extent*, and Section Five, *Fate and Transport*, of the Final RI Report.
- Begin the rewrite of TM #10, *Preliminary Remediation Goals*, once COCs are completed.

Problems

None

Open Items

Methodologies to be used in developing the Final RI are being determined.

2.1.2 OU 1 REMEDIATION

Scope of Work Changes This Period

None

Technical Approach Changes This Period

None

IAG Milestone Accomplishments

Submit Draft Proposed IM/IRA Decision Document	18 Sep 89
Submit Proposed IM/IRA Decision Document	06 Oct 89
Submit Final IM/IRA Decision Document	05 Jan 90
Begin Phase I-A IM/IRA Construction	15 Jan 90
Restart Phase I-A IM/IRA Construction (after shutdown)	20 Jun 90
Begin Phase I-B IM/IRA Construction (ahead of schedule)	28 Sep 90
Submit IM/IRA Implementation Document	22 Feb 91
Begin Phase II-A IM/IRA Construction	01 Apr 91
Begin IM/IRA Testing	05 Aug 91
Begin Phase II-B IM/IRA Construction	03 Sep 91
Complete IM/IRA Construction (891 treatment building)	02 Mar 92
Complete IM/IRA Construction (French drain)	13 Apr 92

Future IAG Milestones Through FY94

None

June Work Activity Status

Interim Measures/Interim Remedial Action (IM/IRA) Facility - 891 Treatment Building: T-205 effluent tank was filled with treated effluent and was discharged after analytical results were received. T-206 remains full. Total dissolved solids (TDS) laboratory results are pending before the tank can be discharged. Discharge of T-207 into the South Interceptor Ditch (SID) was started (after receiving results) on June 22, 1993. The wetland is beginning to show signs of drought due to the recent dry weather, and it is being investigated to determine if discharging treated effluent into the wetland area is feasible.

Influent holding tank T-202 was filled with decontamination water in May 1993. Piping modifications were completed in order that the ion exchange (IX) surge tank (T-203) water could be recirculated back through the ultraviolet (UV) unit without treatment through the IX system. After batching the high concentration trichloroethene (TCE) decontamination water with other decontamination water, the concentrations were found to be relatively low. However, 4-methyl, 2-pentanone was found in the influent when it was sampled on the initial pass through the UV system. This compound has been detected in other instances because of the leaching of contaminants

from tank coatings. Because decontamination water volatile organic compounds (VOC) analysis does not target 4-methyl, 2-pentanone, it is uncertain whether this instance came from decontamination water or tank coatings. Initial tests of treated UV effluent showed that all TCE was destroyed. However, retreatment of the water through the UV system raised the temperature of waters within the T-203 surge tank to 130 °F. It appears as though these abnormally high temperatures caused additional leaching of 4-methyl, 2-pentamone. A second piping modification was performed so that water could be pumped from the T-203 surge tank back into the influent holding tank T-202. The water was then pumped into T-202, held for a couple of weeks to cool, and then treated through the UV and immediately through the IX system to avoid residence time within the surge tank. Laboratory results on the final treatment of this water is pending. This was the first incident of possible tank coating problems experienced on any of the influent process tanks.

Some difficulties with the IX system were experienced in late June 1993. Regeneration of the resins was needed more often than necessary. It was discovered that an incorrect flowrate during regeneration was the cause of the problem. This was corrected and the system is now running properly.

Several flow failures have recently been detected at P-102 (French drain sump pump). A new pump will be ordered as a spare, and the old one will be removed and inspected. Pump P-101 remains operational and continues to pump water to the treatment facility holding tanks.

Treated ground water this month: 115,300 gallons
Total treated ground water (approximately): 1,382,000 gallons

Planned Work for July

- Procurement of in-line gas chromatograph will be completed in July 1993.
- Continue normal operations and maintenance.
- Continue work on the IM/IRA Treatment System Quarterly Report due July 31, 1993.

Problems

None

Open Items

Review of sampling analysis documentation to determine whether enough data is present to perform a risk assessment on the 881 Hillside footing drain.

2.2 OU 2 - 903 PAD, MOUND, AND EAST TRENCHES

The contamination at the 903 Pad and Mound areas is largely attributed to the storage in the 1950s and 1960s of waste drums that corroded over time, allowing hazardous and radioactive material to leak into the surrounding soil. Additional contamination may have resulted from wind dispersion during drum removal and soil movement activities. The East Trenches Area was used for disposal of plutonium- and uranium-contaminated waste and sanitary sewage sludge from 1954 to 1968. Two areas adjacent to the trenches were used for spray irrigation of sewage treatment plant effluent, some may have contaminants that were not removed by the treatment system.

An IM/IRA provides for surface water in source areas of contamination to be collected, treated, and discharged to the surface water drainage. Operation of a field-scale treatability unit for the South Walnut Creek drainage began in May 1991. The effectiveness of the treatment process will be evaluated at three locations: the entrance to the treatment facility, several points within the facility, and the discharge point. After completion of the field-scale treatability tests, the unit is anticipated to remain in service until the final remedial action is operational. The Remedial Investigation (RI) and Feasibility Study (FS) are continuing in parallel with the IRA.

A second IM/IRA was established in late-1991. This Subsurface Investigation Interim Measure/Interim Remedial Action Plan/Environmental Assessment (IM/IRAP/EA) is north of Woman Creek and encompasses the 903 Pad, the Mound Area, and the East Trenches Area of OU 2. This IM/IRAP/EA identifies and evaluates interim remedial actions for removal of residual free-phase VOC contamination from three distinct subsurface environments at OU 2. Each of the VOC-removal actions involve *in situ* vacuum-enhanced vapor extraction technology. The interim remedial actions for the collection of information will aid in the selection and design of final remedial actions that address subsurface, residual free-phase VOC contamination at OU 2.

2.2.1 OU 2 ASSESSMENT

Scope of Work Changes This Period

None

Technical Approach Changes This Period

None

IAG Milestone Accomplishments

Submit Draft Phase II RFI/RI Work Plan (Alluvial)	21 Dec 89
Submit Final Phase II RFI/RI Work Plan (Alluvial)	12 Apr 90
Submit Draft Phase II RFI/RI Work Plan (Bedrock)	05 Feb 91
Submit Final Phase II RFI/RI Work Plan (Bedrock)	02 Jul 91

Future IAG Milestones Through FY94

Milestone Name	IAG Date Scheduled	Extension Status	Planned Accomplishment Date
Submit Draft Phase II RFI/RI Report	12 Mar 93	Denied	16 Dec 93
Submit Final Phase II RFI/RI Report	09 Aug 93		23 May 94
Submit Draft CMS/FS Report	04 Nov 93		17 Oct 96
Submit Final CMS/FS Report	10 May 94		26 Jun 97
Submit Draft PP	10 May 94		26 Jun 97
Submit Final PP	09 Aug 94		13 Jan 98

June Work Activity Status

In OU 2, 903 Pad, Mound, and East Trenches Area, the first phase of the Bedrock Field Program work is complete. All pilot boreholes, A-series wells, and both source boreholes are complete. Results have been received for two wells. A deeper B-series well will be installed at WC-1, because 9 parts-per-billion (ppb) trichloroethylene (TCE) was detected. The drill rig began drilling the B-series well on June 25, 1993, after delivery of surface casing. Following guidance in the Work Plan, two additional B-series wells will not be drilled because the A-series well samples did not contain contamination. The remaining three A-series wells have not been sampled and/or do not yet have sample analysis. Slug testing has been completed for one well and is in progress for another two wells. After the results on the remaining A-series wells have been received, determination will be made on how many additional B-series wells will be required.

A meeting was held on June 2, 1993, with the regulatory agencies to discuss the methodology for defining COCs; agreement was reached on the way COCs were defined. Ground water COCs were completed this month.

Procurement completed negotiations on the contract for the bedrock and additional tasks on June 11, 1993. The definitization subcontract (Master Task Subcontract [MTS]) for the RI work was sent out July 1, 1993.

Risk Assessment options were developed that discuss the impacts of the OU 1 negotiations on OU 2 risk assessment. EG&G submitted a letter to DOE describing these options and their impact.

Summary tables were delivered to the regulatory agencies on June 14, 1993. A few remaining tables were delivered June 16, 1993. COC determinations were completed. Meetings with the regulatory agencies were held to discuss the summary tables, the newest identified trench, the Test 2 of the IM/IRA, and the status of the outstanding TMs. TM #6, *Modeling*, will be approved with the submittal of revised comments.

The revised Addendum to the Contingency Plan for TM # 8, *Bedrock*, was received by DOE on June 29, 1993. This addendum is expected to receive approval from the regulatory agencies.

Technical Memoranda

Project:	OU 2 - 903 Pad, Mound, and East Trenches
TM #5	
TM Title	Exposure
TM Status	When preparation concluded or estimated to be concluded: 1/15/93 Projected date of submittal to EPA/CDH: 1/15/93 Actual date of submittal: 1/15/93 Date when comments received: 2/11/93 EPA, 3/12/93 CDH
TM #6	
TM Title	Modeling
TM Status	When preparation concluded or estimated to be concluded: 1/15/93 Projected date of submittal to EPA/CDH: 1/15/93 Actual date of submittal: 1/15/93 Date when comments received: 4/1/93 EPA, 3/31/93 CDH
TM #7	
TM Title	Surficial Soils
TM Status	When preparation concluded or estimated to be concluded: 1/7/93 Projected date of submittal to EPA/CDH: 1/7/93 Actual date of submittal: 1/12/93 Date when comments received: 1/21/93 Approved
TM #8	
TM Title	Bedrock
TM Status	When preparation concluded or estimated to be concluded: 3/15/93 Projected date of submittal to EPA/CDH: 3/1/93 Actual date of submittal: 3/15/93 Date when comments received: 4/14/93 EPA, 4/14/93 CDH
TM #8 Addendum	
TM Title	Contingency Plan for Revised Phase II RFI/RI Work Plan (Bedrock)
TM Status	When preparation concluded or estimated to be concluded: Projected date of submittal to EPA/CDH: None Actual date of submittal: Date when comments received:

Planned Work for July

- B-series wells to be completed for the Bedrock Field Program.
- Provide two additional TMs for review by the regulatory agencies for toxicity assessment and COCs.

- Complete soil vapor surveys at the 903 Pad.
- Deliver the OU 2 surface water IM/IRAP to the regulatory agencies.

Problems None

Open Items None

2.2.2 OU 2 REMEDIATION

Scope of Work Changes This Period Scope associated with the IAG milestone titled "Draft Phase II Treatability Study Report" has increased due to the revised content, format and approach. Revision includes the addition of a risk assessment.

Technical Approach Changes This Period None

IAG Milestone Accomplishments

Submit Draft Proposed IM/IRA Decision Document	19 Jun 90
Submit Proposed Plan IM/IRA Decision Document	18 Sep 90
Submit Draft Responsiveness Summary	13 Dec 90
Submit Final Responsiveness Summary and Final IM/IRA Decision Document	11 Jan 91
Field Treatability Test System Installation Complete	10 May 91
Begin Field Treatability Testing (Carbon System)	13 May 91
Submit Draft Treatability Test Report (Phase I GAC)	01 Apr 92
Complete IM/IRA Construction (radionuclides removal system)	24 Apr 92
Begin Field Treatability Testing (radionuclides removal system)	27 Apr 92
Submit Final Treatability Test Report (Phase I GAC)	02 Jun 92
Submit Subsurface Site I Draft Test Plan	29 Oct 92
Submit Subsurface Site I Final Test Plan	12 Jan 93

Future IAG Milestones Through FY94

Milestone Name	IAG Date Scheduled	Extension Status	Planned Accomplishment Date
Submit Draft Phase II Treatability Study Report	18 May 93	13 Jul 93	13 Jul 93
Submit Final Phase II Treatability Study Report	13 Jul 93	08 Sep 93	08 Sep 93

June Work Activity Status

Surface IRA Program - A total of 19, 55-gallon drums of sludge was generated by the Field Treatability Unit (FTU) this month. Warmer weather and decreased precipitation resulted in reduced treated water and generated sludge.

The use of powdered carbon in the concentration tank has been stopped. The carbon was used to scour the membrane in the microfiltration unit, but it was found that the same results can be achieved without the addition of chemicals. This change will result in less mixed hazardous waste drums (approximately one less drum every 2 months (50 lbs/wk) and lower operation costs as a result of less chemical usage).

During a chemical cleaning of the membranes, sulfuric acid (20 gallons) is used in conjunction with hydrogen peroxide (10 gallons) to remove any deposits from the membrane surface. In the past, the sulfuric acid and hydrogen peroxide were both replaced before proceeding into another cleaning cycle. Analysis of the pH on the used solution indicated that the sulfuric acid could be recycled into additional cleaning cycles. Hydrogen peroxide was added to the used sulfuric acid, and this solution was used successfully in a cleaning cycle. Analysis of the twice-used sulfuric acid indicates that it is still usable for another cleaning cycle. Future practice will include recycling the sulfuric acid and using it until its pH is no longer acceptable. This will result in at least a three-time reduction in sulfuric acid for this process.

Work is progressing towards meeting the OU 2 IM/IRA Draft Phase II Treatability Report delivery date of July 13, 1993. A draft of the OU 2 IM/IRA Draft Report was completed on June 25, 1993. DOE will receive a draft by July 6, 1993. A joint DOE and EG&G review is scheduled for July 7, 1993.

The procedure for determination of change-out times for the Granular Activated Carbon (GAC) is being altered. Previous procedures involved changing out the GAC every 4 months, regardless of the volume of water passed through it. New procedures will involve sampling the lead GAC effluent weekly to determine when the GAC has been exhausted. The polish GAC will remove any volatile organic compounds that the lead GAC did not remove. This will assure full use of the GAC, thus reducing replacement, storage, and disposal costs. This procedure is approved in the OU 2 Decision Document.

Treated effluent samples are being increased from once a week to twice a week to comply with the OU 2 Decision Document.

Treated Surface Water this month:	724,070 gallons
Total Treated Water:	16,596,370 gallons

Subsurface IRA Program - The fabrication of the Mobil Soil Vapor Extraction Unit (MSVEU) continues. Final design documents for the MSVEU were submitted for review and approval. A letter of subcontract was issued to allow expedited planning for the implementation and operation of the MSVEU. The delivery date is scheduled for August 3, 1993.

The Draft Soil Vapor Extraction Pilot Test Plan for Site #2 was received by the regulatory agencies and DOE on June 24, 1993. This was an Interagency Agreement (IAG) milestone.

The baseline soil gas survey at the Mound site was completed and work began at the 903 Pad. Field maps of Trench 110 have been received. A Field Instrument for Detection of Low Energy Radiation (FIDLER) survey was completed according to Radiological Engineering.

Contaminant concentrations were high enough to require a more detailed survey at the Mound and East Trenches. The existing subcontract will be modified to cover this work.

Planned Work for July

Surface IRA Program

- Deliver IM/IRA Draft Treatability Report to the regulatory agencies on July 13, 1993.
- Continue Operations.
- Continue preparation of submittal of the OU 2 Operations and Management (O&M) second quarterly report.

Subsurface IRA Program

- Fabrication of the MSVEU continues. Delivery of the plan is expected to be August 3, 1993.
- Site preparation for implementation of the MSVEU is to begin at the end of July 1993.
- Finalize contract for the implementation contractor.

Problems

On June 18, 1993, a water main from Building 559 broke and the water discharged into Walnut Creek (Weir 132). The water main break contributed an additional estimated 80-90 gallons per minute (gpm) of flow to the Field Treatability Units (FTU). The water main was repaired by June 21, 1993. Because of the increased flow and high turbidity water, shutdown of the FTU and additional cleaning of the filter were required.

Unplanned Shutdowns:

18 Jun 93 - FTU was shut down (weirs bypassed) for approximately 45 minutes for chemical cleaning of filters.

18 Jun 93 - FTU was shut down for approximately 30 minutes for chemical cleaning.

Other Shutdowns:

21 Jun 93 - FTU was shut down for approximately 90 minutes for generator change out.

Open Items

None

2.3 OU 3 - OFFSITE AREAS

OU 3 can be divided into two categories based on two main activities. The IAG directs activities according to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). This involves assessment of contamination in offsite areas also referred to as Contamination of the Land Surface (IHSS 199), Great Western Reservoir (IHSS 200), Standley Lake (IHSS 201), and Mower Reservoir (IHSS 202). The second category responds to a 1985 out-of-court lawsuit settlement, McKay vs. U.S., which directed that the surface soil contamination be remediated. Remedial activities in compliance with the Settlement Agreement (deep disc plowing) began in 1985. The disturbance resulting from remediation is being revegetated with mediocre success. The overall schedule for this activity is determined by the year-to-year success of the revegetation effort and requirements of the landowners.

Scope of Work Changes This Period None

Technical Approach Changes This Period None

IAG Milestone Accomplishments

Submit Draft Past Remedy Report	26 Oct 90
Submit Draft Historical Information/ Preliminary Health Risk Assessment Report	09 Nov 90
Submit Final Past Remedy Report	02 Apr 91
Submit Final Historical Information/ Preliminary Health Risk Assessment Report	16 Apr 91
Submit Draft Phase I RFI/RI Work Plan	10 Jul 91
Submit Final Phase I RFI/RI Work Plan	06 Dec 91

Future IAG Milestones Through FY94

Milestone Name	IAG Date Scheduled	Extension Status	Planned Accomplishment Date
Submit Draft Phase I RFI/RI Report	16 Jul 93	Pending	02 Nov 93
Submit Final Phase I RFI/RI Report	13 Dec 93	Pending	20 Jul 94

June Work Activity Status The surface soil sampling portion of the field work was completed. The Wind Tunnel portion of the field work began June 1, 1993, and will continue into July 1993.

A presentation was made on June 8, 1993, to the Health Advisory Panel (HAP), Soil Sampling Subcommittee, on the historical soil sampling summary in the Past Remedy Report. This subcommittee is composed of several environmental group representatives. The presentation was helpful to communication with the HAP.

DOE submitted a letter to the regulatory agencies on June 28, 1993, requesting a schedule extension for the Draft & Final RI Reports. The Draft RI Report is due to the regulatory agencies on July 16, 1993. This date will not be met because of delays in obtaining permission to sample offsite private land.

A Statement of Work (SOW) is being developed to procure a subcontractor for weed control activities on the Settlement Agreement property. These weed control activities will include mowing and a fall application of a broad spectrum herbicide. The weed control is necessary to limit the competition from weed species and enhance the growth of more desirable plant species.

Technical Memoranda

Project	OU 3 - Offsite Areas
TM #1	
TM Title	Field Changes to RFI/RI Work Plan
TM Status	When preparation concluded or estimated to be concluded: 5/10/93 Projected date of submittal to EPA/CDH: 5/10/93 Actual date of submittal: 5/10/93 Date when comments received: (expected) 7/09/93
TM #2	
TM Title	Exposure Scenarios for the HHRA
TM Status	When preparation concluded or estimated to be concluded: 5/12/93 Projected date of submittal to EPA/CDH: 5/12/93 Actual date of submittal : 5/03/93 Date when comments received: (expected) 7/09/93 Currently in reviewby EPA/CDH
TM #3	
TM Title	Modeling
TM Status	When preparation concluded or estimated to be concluded: 9/29/93 Projected date of submittal to EPA/CDH: 9/29/93 Actual date of submittal : N/A Date when comments received: N/A
TM #4	
TM Title	Contaminants of Concern
TM Status	When preparation concluded or estimated to be concluded: 10/18/93 Projected date of submittal to EPA/CDH: 10/18/93 Actual date of submittal : N/A Date when comments received: N/A

Planned Work for July

- Complete the Wind Tunnel field work.
- Continue preparation of the TMs.

Problems

DOE developed a letter to the regulatory agencies requesting a schedule extension for the Draft & Final Phase I RFI/RI Reports. The Draft RI Report is due to the regulatory agencies on July 16, 1993, and this date will not be met because of delays in obtaining permission to sample offsite private land. The DOE has requested that the IAG milestone date of July 16, 1993, for the Draft Phase I RFI/RI Report be extended to February 14, 1993, and the IAG milestone date of December 13, 1993, for the Final Phase I RFI/RI Report be extended to October 21, 1993.

Open Items

None

2.4 OU 4 - SOLAR EVAPORATION PONDS

OU 4 is comprised of five solar evaporation ponds: 207A, 207B series (north, center, south), and 207C, which were constructed for treatment and storage of process water from industrial operations. The process water contained treated acidic wastes, industrial liquid wastes (e.g., metal plating solutions), and low-level radioactive wastes.

As technology improved through the early 1960s and 1970s, the ponds were relined with various upgraded materials. However, leakage from the ponds into the soil and ground water was detected. Interceptor trenches were installed in 1971 to collect and recycle contaminated ground water to the ponds and to minimize natural seepage and pond leakage from entering North Walnut Creek. In 1981, these trenches were replaced by the current, larger interceptor trench system (ITS), which returned approximately four million gallons of ground water back into the solar evaporation ponds a year.

No additional process water has been pumped into the ponds since 1986. However, the ITS collected and returned ground water into the solar evaporation ponds until new storage tanks were completed and placed in operation in April 1993. The tanks allowed termination of placement of contaminated ground water into the ponds. This placement of water into the ponds had been occurring without meeting Land Disposal Restrictions and Minimum Technology Requirements of RCRA. The water stored in these tanks is now being processed in Building 374 evaporation-treatment facilities as capacity allows, and a new, dedicated Building 910 evaporation-treatment facility will be started in the fourth quarter of FY93.

The Solar Evaporation Ponds Project is comprised of four subprojects: pond sludge processing by means of the Agreement in Principle between DOE and CDH; a water management/ treatment by means of the interim Measure/Interim Remedial Action (IM/IRA) Decision Document signed by EPA, CDH and DOE; the OU 4 assessment and remedial action by means of the IAG, which identified the ponds as one of the sixteen OUs to be remediated at the Rocky Flats Plant and incorporated the 1988 Ponds-Closure Plan submitted by DOE to the regulators; and pad operations and storage activities that are necessary to meet the plant's RCRA interim status and permit requirements with regards to storage of pond wastes. The water management and pond sludge clean-out are necessary precursors to OU 4 assessment and remediation, and pad operations are necessary support activities at least until the pond sludge waste is disposed.

These four subprojects were planned to close the ponds and remediate the ponds area. In chronological sequence, the project was scoped to remove water from the ponds; provide a treatment facility to replace the ponds as evaporation-treatment and storage units for pond-related contaminated ground water; remove and dispose of pond sludge in compliance with all regulations such as the Land Disposal Restrictions of RCRA; assess the nature and extent of contamination at the ponds; complete a RCRA closure of the impoundments; and remediate the ponds as needed.

The April 1992 IM/IRA was developed as a regulatory agency requirement that was out of scope from the tasks outlined in the IAG. DOE attempted to modify an existing permit for water removal and treatment for liquids in the solar ponds and ground water collected by the ITS, but the regulatory agencies rejected permit modification and required development of an IM/IRA to document operation and use of the proposed water treatment system and provide the permitting mechanism for the system. The development and implementation of this IM/IRA precedes and overlaps the IAG scheduled Phase I RFI/RI field work.

The RCRA/CERCLA investigation Phase I field work began in FY93 and will continue through construct of the final corrective/remedial action. The technical scope to be performed by means of the IAG is funded through the OU 4 Assessment and Remediation area, with the other areas funded to provide necessary precursor and support activities to allow that IAG scope to be completed. There is an IM/IRA scheduled in the IAG that will be completed after results are collected and analyzed from the Phase I RFI/RI field work. The first draft of the IAG IM/IRA is scheduled for delivery in April 1994.

2.4.1 OU 4 ASSESSMENT

Scope of Work Changes This Period None

Technical Approach Changes This Period None

IAG Milestone Accomplishments

Submit Draft Phase I RFI/RI Work Plan	08 Jun 90
Submit Final Phase I RFI/RI Work Plan	26 Nov 90

Future IAG Milestones Through FY94

Milestone Name	IAG Date Scheduled	Extension Status	Planned Accomplishment Date
Submit Draft Phase I RFI/RI Report	21 May 93	14 Sep 93	17 Apr 94
Submit Final Phase I RFI/RI Report	18 Oct 93	14 Feb 94	17 Sep 94
Submit Draft Phase II RFI/RI Work Plan	22 Apr 94		18 Aug 95
Submit Final Phase II RFI/RI Work Plan	19 Sep 94		26 Apr 96

June Work Activity Status

The Draft Phase I RFI/RI Report was due May 21, 1993. A letter requesting an extension to April 19, 1994, was submitted to the regulatory agencies on May 5, 1993. On May 19, 1993, a reply from the regulatory agencies granted a 79-working-day extension to September 14, 1993. DOE was not satisfied with this extension and it initiated the "dispute resolution" process in accordance with the IAG.

Subsequently, a meeting was held with the regulatory agencies to discuss this dispute. At this meeting, the regulatory agencies proposed a simplified RI process that would eliminate the IAG milestones and the imposed fines. The proposed simplified process suggested by the regulatory agencies would descope the RFI/RI to remove the IAG milestones that have not been met; it would expedite the sludge removal from the ponds; and it would expedite the closure of the ponds. A new milestone schedule will be developed, including a date when sludge removal is to be completed. This proposal is still in the discussion stage among the regulatory agencies, DOE, and EG&G. Also, a task team has been formed to develop an accelerated schedule for sludge removal.

Vadose Zone monitoring continues relative to lysimeter sampling, neutron probe monitoring, and ground water elevation monitoring. Core logging activities also continue.

DOE received correspondence from the regulatory agencies regarding the clarification of Environmental Evaluations (EEs) for OUs 4 and 7. The direction from the regulatory agencies is to conduct the EE program and archive the data generated from the evaluation. The EE data will not be incorporated into the Phase I RFI/RI reports. On June 10, 1993, the EE was implemented in accordance with written direction from the regulatory agencies and DOE regarding RCRA OUs. The OU 4 EE will be completed and the data will be archived for integration into the OU 4 Phase II RFI/RI report.

The geophysical survey was completed.

TM #2, *Modifications to Field Activities*, and TM #4, *Human Health Assessment Exposure Scenarios*, were received by DOE and subsequently submitted to the regulatory agencies.

The Draft TM #5, *Human Health Assessment Exposure Models*, was completed on June 11, 1993, and was received by DOE on June 15, 1993, and subsequently submitted to the regulatory agencies.

Approximately 50 percent of the OU 4 RI unvalidated data has been received. The RI data reflects only detectable contaminants. A preliminary analysis indicates a possibility of elevated nitrates/nitrites, tritium, and a few other constituents.

The EE is being conducted in accordance with TM #3, *Environmental Evaluation*, and comments from the regulatory agencies on this document.

Technical Memoranda

Project	OU 4 - Solar Evaporation Ponds
TM #1	
TM Title:	Vadose Zone Investigation
TM Status:	Draft submitted to EPA/CDH: 11/16/92 Comments received: 11/30/92 Conditional Approval: 11/30/92 Projected submittal of Final to EPA/CDH: 12/15/92 Actual submittal date of Final: 12/15/92 Submittal of TM #1 Vadose Zone Schedule: 05/19/93 EPA/CDH Final Approval of TM #1: 06/17/93

TM #2
TM Title: Modifications to Field Activities
TM Status: Draft submitted to EPA/CDH: 03/18/93
Comments received: 05/07/93
Projected submittal of Final to EPA/CDH: 06/07/93
Actual submittal date of Final: 06/09/93
EPA/CDH Final Approval of TM #2: 06/30/93

TM #3
TM Title: Environmental Evaluation
TM Status: Draft submitted to EPA/CDH: 03/19/93
Comments received: EPA04/21/93 CDH: 06/02/93
Projected submittal of Final to EPA/CDH: 04/30/93
Actual submittal date of Final: 07/02/93
EPA/CDH Final Approval of TM #3: 07/30/93

TM #4
TM Title: Human Health Risk Assessment Exposure Scenarios
TM Status: Draft submitted to EPA/CDH: 3/19/93
Comments received: EPA 04/21/93 CDH 04/23/93
Projected submittal of Final to EPA/CDH: 06/11/93
Actual submittal date of Final: 06/11/93
EPA/CDH Final Approval of TM #4: 06/25/93

TM #5
TM Title: Human Health Assessment Exposure Models
TM Status: Projected submittal of Draft to EPA/CDH: 08/01/93
Actual submittal of Draft: 06/24/93
Projected submittal of Final to EPA/CDH: 10/15/93

TM #6
TM Title: Contaminants of Concern
TM Status: Projected submittal of Draft to EPA/CDH: 11/09/93
Projected submittal of Final to EPA/CDH: 12/22/93

TM #7
TM Title: Toxicity Assessment
TM Status: Projected submittal of Draft to EPA/CDH: 11/04/93
Projected submittal of Final to EPA/CDH: 12/22/93

Planned Work for July

- Vadose zone monitoring will continue to include the following: lysimeter sampling, neutron probe monitoring, and ground water elevation monitoring.
- Data evaluation activities associated with review and cleanup of RI data will continue.
- A design criteria package will be developed for accelerated sludge removal.

Problems

The OU 4 IAG milestone date of May 21, 1993, for the submittal of the Draft Phase I RFI/RI Report, will not be met, and the 79-day extension to September 14, 1993, granted by CDH, is inadequate to complete the report.

Open Items

DOE is considering the proposed simplified process suggested by the regulatory agencies to descope the RFI/RI, expedite the sludge removal from the ponds, and expedite the closure of the ponds.

2.4.2 OU 4 REMEDIATION

Scope of Work Changes This Period

None

Technical Approach Changes This Period

None

IAG Milestone Accomplishments

None. The first IAG remediation milestone for this OU is the Draft Phase I Proposed IM/IRA Decision Document scheduled for April 14, 1994.

Future IAG Milestones Through FY94

Milestone Name	IAG Date Scheduled	Extension Status	Planned Accomplishment Date
Submit Draft Phase I Proposed IM/IRA Decision Document	14 Apr 94		8 Oct 96
Submit Draft Phase II Proposed IM/IRA Decision Document	12 Sep 94		17 Jun 97

June Work Activity Status

Program Management - The regulatory agencies made a significant, new proposal at a dispute resolution meeting during the month. The meeting was scheduled to discuss the extension of two Phase I RFI/RI report milestones that had only been partially extended by the regulatory agencies (See 2.4.1 OU 4 Assessment). The regulatory agencies' basic proposal was to trade those two milestones for an acceleration of the Phase I IM/IRA pond closure schedule as currently included in the IAG. Acceleration of the IM/IRA requires concurrent acceleration of the removal of the sludge from the ponds.

Based on informal direction from DOE, a team was assembled, and it began planning a revised sludge removal strategy and accelerated IM/IRA schedule. A Baseline Change Proposal (BCP) was prepared and approved by the Plant Change Control Board (PCCB). The BCP covers developing the new scope and cost of the study. The study involves developing three new accelerated schedules:

- Phase I reduced reporting
- Accelerated sludge removal from the ponds
- Accelerated Phase I IM/IRA

Three options were selected for removing material from the ponds as follows:

- Storage in small containers (drums, metals, B boxes, etc.)
- Storage in "Frac" tanks (large metal containers similar to a tanker trailer - mobile when empty)
- Storage in Modular Tanks (like those used for the Interceptor Trench System [ITS])

Regulatory - Building 910 houses the new treatment facility for ITS water. Cold testing of Building 910 evaporators identified many leaks, especially during thermal cycling and in metal-to-plastic fittings. The leaks were repaired and questions involving minor leaks resolved using the permit language in the IM/IRA. Resolution of the issue of leaks solves a problem that had threatened to delay the scheduled acceptance phase operation. The acceptance phase qualification test started on June 17, 1993, and was completed on June 28, 1993.

Operations at the new evaporator facility in Building 910, which will treat ITS water for reuse at the plant, are expected to be limited by air emissions from the natural gas diesel engines. Support from the engine vendor and emission-testing vendor was arranged to adjust the engines as part of the air-emissions source test. To accommodate minor changes in the Building 910 qualification test schedule, the air emissions source test was completed June 29, 1993. Preliminary results indicate the engines fall within predicted emission levels.

The RFP experienced heavy rain that produced approximately 1.44 inches of precipitation in about 2 days. This amount of rain represents over ten percent of the average annual precipitation at the plant. The Solar Ponds ITS collection sump overflowed as a result of the collection of surface runoff. Since the sump is not regulated under RCRA, the overflow was not RCRA-reportable. The water from the ITS sump is collected in the Walnut Creek retention ponds and will exit the plantsite through a National Pollutant Discharge Elimination System (NPDES) discharge point.

Pad Operations/Storage Status and Issues - Pondcrete delisting efforts are proceeding. The final Phase I meeting was held on June 14, 1993. Out of 128 specific analytes, 68 have been identified as absent from the existing database for 207B and clarifier, 207C ponds. The subcontractor for delisting is preparing a Work Plan and final delisting strategy. The Work Plan will include recommended additional sampling. Delisting is proceeding with the knowledge that other, non-cement based technology may be ultimately selected as the final remedy. Program plans will become clear before the next decision point in the proposed schedule, October 27, 1993.

On June 16, 1993, personnel from the CDH toured the 904 pad. The purpose of the tour was to familiarize the permit writers with the condition of the triwall boxes. These containers are the subject of a request for a change to interim status that would authorize EG&G to store the failed pondcrete and saltcrete in a waste pile configuration. Additional information regarding the site hydrology was provided to CDH after the tour.

Water Management Status and Issues - A detailed schedule for the sludge consolidation activity was completed and is now being reviewed for compression and baselining. The schedule shows Pond B - Center clean and dry by September 30, 1993, and Pond B-North clean and dry by November 19, 1993. This schedule requires that the excess water be out of the ponds by July 1, 1993; the schedule was accomplished. Continuing this accelerated schedule, which allows drilling in the Center and North Ponds this year, will require higher than planned expenditures during this fiscal year. Sources for these funds are currently being explored. (Note: This status refers to excess water for the three-impoundment configuration. The amount of water deemed excess will change after one impoundment is emptied, leaving a two-impoundment configuration.)

Solar Ponds Program Office staff met with support groups to discuss some apparent inconsistencies among the Building 910 Process Control Plan (PCP), Quality Plan (QP), and sampling plans. The PCP & QP are summary-level documents with regards to sampling, and the specifics to be implemented are in the sampling plans. This confusion delayed sign-off of the documents but resulted in no impact to the Building 910 schedule.

To allow the evaporators time to process accumulated backlog and allow for maintenance on the clogged main heat exchanger, pond effluent was not pumped to Building 374 for several weeks in June 1993. Some maintenance was required on the clogged main heat exchanger tubes. An acid wash did provide some improvement (to about 28 gpm vs. normal 35 gpm) and the units were put back on-line.

The Building 910 evaporator process qualification test was performed. Since the results from the qualification samples will take about 2 weeks to receive, some additional samples were analyzed onsite by the laboratory in Building 881 to provide an early estimate of success. The laboratory provided results on metals within one shift of the samples being collected. The laboratory results indicate that the Building 910 product water will meet requirements for distillate reuse.

The 207B Center Pond was pumped down to 1 to 2 inches, and the sludge remaining is a solid cake of silt and clay-like material that does not pump very well. Access stairways were put in place to allow operator access to the pond bottoms without

harnesses and lanyards. Operations began June 16, 1993, to wash the sludge to the pump with pressure hoses. Observation of the exposed bottom liner in the pond shows it to be in very poor condition with large pieces loose and with significant unevenness of the pond bottom. There is still too much water in North Pond to evaluate the quantity of sludge present.

Pondsludge Status and Issues - The scope, Government Fair Cost Estimate, and the Purchase Requisition have been processed to Purchasing for Halliburton-NUS (HNUS) to participate in the Accelerated Sludge Removal Trade-off Study. HNUS will provide technical staff to assist with the Sludge Management Team deliberations.

Planned Work for July

- Develop accelerated sludge removal plan in support of dispute resolution negotiations.
- Ongoing water management and pad operations.
- Complete Building 910 acceptance phase.
- Complete construction of Treatment and Storage System.

Problems

None

Open Items

Milestone Schedule for the Solar Evaporation Ponds Water Management IM/IRA:

	Original Date	Revised Date	Status
Begin Construction of Treatment and Storage System	01 Mar 92	06 Apr 92	Complete
Complete Construction of Treatment and Storage System	01 Jun 92	07 Jul 93	In Progress
Conduct Trial Run of Treatment System	08 Jun 92	28 Jun 93	Complete
Begin Full-scale Operations	15 Jun 92	09 Sep 93	Pending
Diversion of ITS Water	16 Apr 93	08 Apr 93	Complete

2.5 OU 5 - WOMAN CREEK

This activity encompasses assessment and remediation of 10 IHSS in the Woman Creek drainage: Original Landfill (IHSS 115); Ash Pits (IHSS 133.1 - 133.4); Incinerator (IHSS 133.5); Concrete Wash Pad (IHSS 133.6); Detention Ponds C-1 and C-2 (IHSS 142.10 and 142.11); Surface Disturbance (IHSS 209), southeast of Building 881. Two additional surface disturbances have been identified and are located, one south of the Ash Pits and a second west of IHSS 209. These last two sites have been included in the OU 5 Work Plan. Possible contamination in this OU was caused by landfill operations, storm water runoff into holding ponds, and ash-pit operations. Constituents in OU 5 are believed to include nitrates, plutonium, uranium, metals, beryllium, solvents, pesticides, oils, paints, and cleaners. Media affected include soils, sediments, surface water, ground water, and air resuspension.

Scope of Work Changes This Period

None

Technical Approach Changes This Period

None

IAG Milestone Accomplishments

Submit Draft Phase I RFI/RI Work Plan	05 Apr 91
Submit Final Phase I RFI/RI Work Plan	30 Aug 91

Future IAG Milestones Through FY94

Milestone Name	IAG Date Scheduled	Extension Status	Planned Accomplishment Date
Submit Draft Phase I RFI/RI Report	30 Nov 93		09 Feb 95
Submit Final Phase I RFI/RI Report	03 May 94		18 Oct 95

June Work Activity Status

The Final TM #9, *Monitoring Wells at Individual Hazardous Substance Site (IHSS) 133, Ash Pits, Incinerator and Concrete Wash Pad*, was delivered to the regulatory agencies on June 23, 1993. Approval was received from the regulatory agencies on the location and number of wells prior to their installation at IHSS 115, the Old Landfill, and IHSS 133, the Ash Pits.

The Draft TM #12, *Exposure Scenarios*, was received by DOE on May 24, 1993. DOE comments were incorporated in the Draft TM #12. DOE will complete the updated TM on July 6, 1993, and will deliver it to the regulatory agencies.

Well drilling at IHSS 133 began on June 2, 1993. A total of four wells were approved by the regulatory agencies, and one or two more may be included. Two wells were completed as of June 8, 1993. Six wells were drilled at IHSS 115. One location was completed on June 8, 1993, but was dry down to 6 feet into bedrock. The rig will offset this location and try again. The regulatory agencies have agreed to the number and location of these wells. With the exception of two surface completions, well

drilling at IHSS 115 and IHSS 133 was completed on June 17, 1993. All well-points at the toe of the IHSS 115, Old landfill, and within soil gas anomaly C were completed.

Work continues to investigate and justify using "modflow" (computer software package) for ground water modeling for the OU 5 RFI/RI Report. Recent reviews suggest that water-balancing might be a more appropriate technique to apply to OU 5. The IAG is being studied for specific requirements regarding ground water modeling, and the OU 5 Work Plan and other OU Work Plans are being evaluated regarding modeling for the evaluation of the ground water.

With the exception of aquifer testing and quarterly sampling of the ground water monitoring wells, all field sampling directed by the OU 5 Field Sampling Plan (FSP), Section 7 of the OU 5 RFI/RI Work Plan should be complete by July 2, 1993.

A 1-to-2 day activity is scheduled to start July 12, 1993, to use the All-Terrain Vehicle (ATV) to collect downhole soil and water (if encountered) samples at a magnetic anomaly located at northing 200-300, easting 200-400. This magnetic anomaly, found during the course of field investigations, is just west of the 133 group of IHSSs near Woman Creek.

Technical Memoranda

Project	OU 5 - Woman Creek Priority Drainage
TM #1	
TM Title	Surface Water and Sediments
TM Status	When preparation concluded or estimated to be concluded: 11/30/92 Projected date of submittal to EPA/CDH: 11/30/92 Actual date of submittal: 10/13/92
TM #2	
TM Title	Surface Geophysics
TM Status	When preparation concluded or estimated to be concluded: 11/30/92 Projected date of submittal to EPA/CDH: 11/30/92 Actual date of submittal: 10/13/92
TM #3	
TM Title	Soil Sampling at IHSS 115
TM Status	When preparation concluded or estimated to be concluded: 5/7/93 Projected date of submittal to EPA/CDH: 5/7/93 Actual date of submittal: 1/26/93

TM #4	
TM Title	Soil Sampling at IHSS 133
TM Status	When preparation concluded or estimated to be concluded: 6/7/93 Projected date of submittal to EPA/CDH: 6/7/93 Actual date of submittal: 4/12/93
TM #5	
TM Title	Soil Gas Sampling at IHSS 115
TM Status	When preparation concluded or estimated to be concluded: 5/7/93 Projected date of submittal to EPA/CDH: 5/7/93 Actual date of submittal: 3/25/93
TM #6	
TM Title	Cone Penetrometer at IHSS 115
TM Status	When preparation concluded or estimated to be concluded: 4/14/93 Projected date of submittal to EPA/CDH: 4/14/93 Actual date of submittal: 3/25/93
TM #7	
TM Title	Soil Borings at IHSS 133
TM Status	When preparation concluded or estimated to be concluded: 5/7/93 Projected date of submittal to EPA/CDH: 5/7/93 Actual date of submittal: 2/19/93
TM #8	
TM Title	Monitoring Wells at IHSS 115
TM Status	TM 8, has been canceled, and is being replaced by a letter outlining the justification behind the location of the three wells in IHSS 115
TM #9	
TM Title	Monitoring Wells at IHSS 133, Ash Pits, Incinerator and Concrete Wash Pad
TM Status	When preparation concluded or estimated to be concluded: 5/14/93 Projected date of submittal to EPA/CDH: 5/6/93 Actual date of submittal: 5/6/93 EPA/CDH comments scheduled: 6/11/93 Actual date of submittal: 06/28/93
TM #10	
TM Title	Soil Borings at IHSS 209
TM Status	When preparation concluded or estimated to be concluded: 3/6/93 Projected date of submittal to EPA/CDH: 3/6/93 Actual date of submittal: 3/6/93

TM #11	
TM Title	
TM Status	To be scheduled in FY94.
TM #12	
TM Title	Exposure Scenarios
TM Status	When preparation concluded or estimated to be concluded: 07/30/93 Projected date of submittal to EPA/CDH: 08/15/93 Actual date of submittal:
TM #13	
TM Title	Modeling
TM Status	When preparation concluded or estimated to be concluded: 07/28/93 Projected date of submittal to EPA/CDH: 08/24/93 Actual date of submittal:

Planned Work for July

- Completion of all Phase I field work, with the exception of quarterly ground water modeling.
- Submit Draft TM #12, *Exposure Scenarios*, to DOE on July 6, 1993.
- Submit Draft TM # 13, *Modeling*, to DOE on July 28, 1993.

Problems

None

Open Items

None

2.6 OU 6 - WALNUT CREEK

This activity encompasses assessment and remediation in the Walnut Creek Drainage of 21 IHSS: the A-series Detention Ponds, Ponds A-1 through A-4 (IHSS 142.1 through 142.4 and 142.12); the B-series Detention Ponds, Ponds B-1 through B-5 (IHSS 142.5 through 142.9); the North, Pond, and South Area Spray Fields (IHSS 167.1, 167.2 and 167.3); the East Area Spray Field (IHSS 216.1), the Trenches A, B and C (IHSS 166.1, 166.2 and 166.3); the Sludge Dispersal Area (IHSS 141); the Triangle Area (IHSS 165); the Old Outfall Area (IHSS 143); and the Soil Dump Area (IHSS 156.2).

The completion of field operations has resulted in obtaining samples from the IHSSs in OU 6. The following samples were obtained: stream sediment, pond sediment, surface soil, subsurface soil, stream water, pond water, and ground water.

Eleven new ground water monitoring wells were installed in OU 6 to supplement four existing wells. These wells are being sampled each quarter for a minimum of 1 year. Geophysical surveys and radiation surveys were also performed in selected areas to supplement the sampling activities.

The regulatory agencies have proposed a new IM/IRA on the operation of the RFP Ponds. If approved, this IM/IRA would affect the RFP ponds, including OU 6, placing them under CERCLA rather than the National Pollution Discharge Elimination System (NPDES).

Scope of Work Changes This Period

None

Technical Approach Changes This Period

None

IAG Milestone Accomplishments

Submit Draft Phase I RFI/RI Work Plan	19 Apr 91
Submit Final Phase I RFI/RI Work Plan	16 Sep 91

Future IAG Milestones Through FY94

Milestone Name	IAG Date Scheduled	Extension Status	Planned Accomplishment Date
Submit Draft Phase I RFI/RI Report	4 Aug 94		11 Jul 94
Submit Final Phase I RFI/RI Report	7 Jan 94		19 Dec 94

June Work Activity Status

TM # 3, *Modeling Surface and Ground Water*, is being reviewed. Comments from DOE on the TM #2, *Exposure Scenarios*, were received on June 9, 1993, and have been incorporated into the Draft Final.

The Draft Final Exposure Scenarios TM will be completed by DOE on July 2, 1993, and will then be delivered to the regulatory agencies.

A proposed Treatability Study (TS)/FS contract format was discussed with Procurement. The proposed contract would be for the TS/FS through the Record of Decision (ROD) with task specific evaluation criteria at specific times during the duration of the contract.

A meeting was held with EPA to discuss project status and the IAG milestone extension request for the OU 6 Draft Phase I RFI/RI Report. The IAG milestone date is August 4, 1993, and DOE is preparing an extension request to be submitted to the regulatory agencies. EPA provided suggestions that would help justify its granting of the extension.

A sample was taken from the radioactive soil found at the base of B1 dam. The sample is being analyzed.

Analytical data on the pond water and sediment data was received on June 11, 1993. The pond sediment analytical results were evaluated for a general determination of the level of contamination.

Sample tracking continued with a review of samples that have not yet been analyzed by the laboratories. The RFP Sample Management Office (SMO) provided support by generating a list of the samples without results and then contacting the appropriate laboratories for the status of the samples. There appears to be a minimal loss of data from occurrences such as broken containers and samples that never arrived at the laboratories. Thus far two samples out of approximately 3,000 have been lost.

Technical Memoranda

Project	OU 6 - Walnut Creek
TM #2	
TM Title	Exposure Scenarios
TM Status	When preparation concluded or estimated to be concluded: 07/01/93 Projected date of submittal to EPA/CDH: 07/09/93 Actual date of submittal: N/A Date when comments received: N/A
TM #3	
TM Title	Modeling Surface and Ground Water
TM Status	When preparation concluded or estimated to be concluded: 07/01/93 Projected date of submittal to EPA/CDH: TBD Actual date of submittal: N/A Date when comments received: N/A

TM #4
TM Title: Contaminants of Concern
TM Status: When preparation concluded or estimated to be concluded: 09/15/93
Projected date of submittal to EPA/CDH: TBD
Actual date of submittal: N/A
Date when comments received: N/A

TM #5
TM Title: Toxicity Factors
TM Status: When preparation concluded or estimated to be concluded: 09/15/93
Projected date of submittal to EPA/CDH: TBD
Actual date of submittal: N/A
Date when comments received: N/A

Planned Work for July

- Complete revisions on TM #2 and TM #3 in July 1993.
- Continue sample tracking and data evaluation.
- Start COC TM in mid-July after sufficient data have been analyzed.

Problems

The Draft Phase I RFI/RI Report due on August 4, 1993, and the Final Phase I RFI/RI Report due on January 7, 1994, will require schedule extensions because of delays incurred before starting field operations. DOE is preparing an extension request to be submitted to the regulatory agencies.

Open Items

None

2.7 OU 7 - PRESENT LANDFILL

The Present Landfill, OU 7, is located north of the plant complex on the western edge of an unnamed tributary of North Walnut Creek and is comprised of two IHSSs. IHSS 114 includes landfill waste and leachate at the Present Landfill, soils beneath the landfill potentially contaminated with leachate, and sediments and water in the East Landfill Pond. IHSS 203 contains potentially contaminated soils at the Inactive Hazardous Waste Storage Area. A section of the Present Landfill located in the southwest corner was used between 1986 and 1987 as a temporary storage area for hazardous waste. The Present Landfill began operation in August of 1968 and was originally constructed to provide for disposal of RFP's nonradioactive and nonhazardous wastes. In September 1973, tritium was detected in leachate from the landfill. During the mid-1980s, extensive investigations were conducted on the waste streams (types) placed into the landfill and, consequently, hazardous wastes/hazardous constituents were identified. Although currently operating as a nonhazardous sanitary landfill, the facility is considered an inactive hazardous waste disposal unit undergoing RCRA closure.

Scope of Work Changes This Period

None

Technical Approach Changes This Period

None

IAG Milestone Accomplishments

Submit Draft Phase I RFI/RI Work Plan	08 Jun 90
Submit Final Phase I RFI/RI Work Plan	28 Aug 91

Future IAG Milestones Through FY94

Milestone Name	IAG Date Scheduled	Extension Status	Planned Accomplishment Date
Submit Draft Phase I RFI/RI Report	12 Oct 93		20 Dec 93
Submit Final Phase I RFI/RI Report	16 Mar 94		2 Sep 94
Submit Draft Phase II RFI/RI Work Plan	13 Sep 94		7 Aug 95

June Work Activity Status

The draft data evaluation and COC identification process flow was reviewed by DOE before being sent to the regulatory agencies. DOE approved the draft and sent a copy to CDH to begin the resolution process. This is a critical path item. A letter was sent to the regulatory agencies recommending the negotiating schedule modifications. Benefits of this include schedule acceleration and scope decreases in Phase II work, as well as some schedule recovery.

New guidance from CDH indicates that the assessment of childhood exposure for the HHRA should not deviate from Risk Assessment Guidance for Superfund (RAGS) guidance. If COCs are identified that may impact children outside the normal ranges covered in RAGS, this should be identified in the text, but quantification is not necessary.

A meeting was held June 8, 1993, with the regulatory agencies to discuss OU 7 streamlining to accelerate the IAG schedule. The strategy will integrate the Phase II Work Plan and field work with Phase I, streamline the IM/IRA process, and move directly into the Corrective Action Decision (CAD)/ROD process. The proposal will also include removing the HHRA from the Phase I RI report. The reasoning behind this is that the HHRA is not required to drive the IM/IRA Decision Document because Colorado Hazardous Waste Act (CHWA) closure requirements already mandate the IM required. This would, in effect, allow OU 7 to rescope the Phase I HHRA to include assessment of all pathways while not impacting IM/IRA work. The scope of the Phase I investigation would need to be revised so that sufficient data could be collected to support the revised HHRA. Initial feedback was positive, and DOE has received the formal proposal and schedule. A draft of this proposal was sent to CDH, and the initial response was favorable. A meeting has been requested to finalize this effort.

Technical Memoranda

Project	OU 7 - Present Landfill
TM #1	
Title:	Exposure Scenarios
Status:	Initial reviews completed by DOE/HQ and RFO. Review completed by EPA and CDH. Response summary developed and submitted to all parties for review. Reviews complete. Revised response summary completed May 25, 1993, with a final review underway prior to transmittal to the agencies.
TM #2	
Title:	Model Description.
Status:	Transmitted to EPA and CDH for review January 8, 1993. Initial review by EPA, CDH, and DOE complete April 30, 1993. Draft response summary complete May 25, 1993.
TM #3	
Title:	Addendum to Final Phase I RFI/RI Work Plan. Surface Soil and Asbestos Pit Disposal Area Characterization Plan.
Status:	Transmitted to DOE for review February 5, 1993. Transmitted to the agencies for review February 8, 1993. Comments received April 26, 1993. Conditional approval by EPA and CDH received February 22, 1993. Clarification of outstanding comments from EPA and CDH received May 3, 1993.
TM #4	
Title:	Contaminants of Concern
Status:	Under development

Planned Work for July

- A proposal to accelerate the schedule for OU 7 has been submitted to the regulatory agencies. This proposal includes streamlining the IM/IRA Aprocess, integrating Phase I and II risk assessment, and eliminating the Phase II Work Plan. This proposal and the associated milestones will be negotiated with the regulatory agencies this month.

Problems

An arbitration meeting was held between DOE and the regulatory agencies to determine a methodology for comparing site data to background. This is a critical path item impacting further progress on OU 7 pending resolution.

Open Items

None

2.8 OU 8 - 700 AREA

The 24 IHSSs that constitute OU 8 encompass separate sites inside and around the production area of the Rocky Flats Plant. Contamination sources within the various IHSSs include above ground and underground tanks, equipment washing areas, and releases inside buildings which potentially affected areas outside the buildings. Contaminants from these sources may have been introduced into the environment through spills on the ground surface, underground leakage and infiltration, and in some cases through precipitation runoff. The chemical composition of the contaminants also varies widely between the IHSSs, ranging from low-level radioactive mixed wastes to nonradioactive organic and inorganic compounds.

Scope of Work Changes This Period

None

Technical Approach Changes This Period

None

IAG Milestone Accomplishments

Submit Draft Phase I RFI/RI Work Plan	01 May 92
Submit Final Phase I RFI/RI Work Plan	01 Dec 92

Future IAG Milestones Through FY94

Milestone Name	IAG Date Scheduled	Extension Status	Planned Accomplishment Date
Submit Draft Phase I RFI/RI Report	14 Feb 94		2 Nov 15
Submit Final Phase I RFI/RI Report	12 Jul 94		19 Jul 16

June Work Activity Status

A meeting was held on June 3, 1993, to review completed sections of the revised Health and Safety Plan (HSP) for implementation of nonintrusive field work for the Industrial Area (IA) OUs 8, 9, 10, 12, 13, 14. DOE will receive two complete copies of the H&S Plan on July 7, 1993.

EG&G Procurement is scheduled to enter into the contract negotiation process for the IA OU contract on July 1, 1993.

Approval of the OU 8 Final Phase I RFI/RI Work Plan based on the comment responsiveness summaries delivered to the regulatory agencies on February 26, 1993, is still pending. Comment revisions received on April 14, 1993, from the regulatory agencies and DOE are being incorporated.

Work is being performed on the identification of intrusive work to be completed on an IHSS by IHSS basis. The IHSSs are being selected to complete their intrusive activities earlier rather than waiting for completion of Decommissioning and Decontamination (D&D) in certain areas. Background information is being collected and compiled to support the

Five-Year Plan (FYP) and will be used for extension requests for all the IA OUs.

A major issue regarding CDH's proposed enforcement action still remains unresolved regarding DOE's position that the "residential use scenario" for the risk assessments for the IA OUs will not be used. The regulatory agencies stated that the residential use scenario must be used. If DOE refuses to use the residential scenario, then approval of the OU 8 Phase I RFI/RI Report will be withheld.

Technical Memoranda

None

Planned Work for July

- The negotiations for the IA OU contract are scheduled for July 1, 1993, with a follow-up meeting scheduled for July 9, 1993. The contract should be awarded by July 15, 1993, pending successful completion of the contract negotiations.
- Begin High Purity Germanium (HPGe) radiation surveys.
- Complete draft of the HSP by July 1, 1993.

Problems

None

Open Items

A decision on what future land use scenario to use for the baseline risk assessment is pending.

2.9 OU 9 - ORIGINAL PROCESS WASTE LINES

This activity involves characterizing a series of tanks and associated process waste lines. The original Process Waste Lines (OPWL) consisted of 35,000 feet of buried pipeline that transferred process wastes from production buildings to onsite treatment plants. A system of 60 designated pipe section, 46 storage tank sites, and 3 other areas of suspected press waste leakage are included in OU 9. The system was placed into operation in 1952, and additions were made to the system through 1975. The original system was replaced over the 1975-1983 period by the new process waste system. Some tanks and lines from the original system have been incorporated into either the new process waste system or the fire water deluge collection system.

The original system is known to have transported or stored various aqueous process wastes containing low-level radioactive materials, nitrates, caustics and acids. Small quantities of other liquids were also introduced in the system, including medical decontamination fluids, miscellaneous laboratory liquids, and laundry effluent. The RFI/RI plan includes inspection and sampling of the OPWL tanks and pipelines that are accessible and soil sampling to determine the extent of contamination in the vadose zone. The soil sampling will be performed by installing test pits and boring where known or suspected releases occurred, near pipe joints and valves, at approximately 200-foot intervals along the pipelines and by installing borings around the outdoor tanks. Soil characterization studies will determine the need for soil removal and/or treatment. The results of the RFI/RI will determine the need for interim and/or final remediation action.

Scope of Work Changes This Period

None

Technical Approach Changes This Period

None

IAG Milestone Accomplishments

Submit Draft Phase I RFI/RI Work Plan	08 Jun 90
Submit Final Phase I RFI/RI Work Plan	26 Nov 91

Future IAG Milestones Through FY94

Milestone Name	IAG Date Scheduled	Extension Status	Planned Accomplishment Date
Submit Draft Phase I RFI/RI Report	11 Apr 94		20 Nov 02
Submit Final Phase I RFI/RI Report	06 Sep 94		07 Aug 03

June Work Activity Status

EG&G is currently reviewing the Integrated OU HSP.

On June 4, 1993, a kick-off/orientation meeting was held to review plans and objectives for the remainder of FY93. During this meeting, two important proposals were offered:

- Where possible, thin the number of pipeline test pits to 200 feet in Phase I Stage 1. This proposal will appear in TM #1 - Stage 1 Field Ssampling Plan (FSP).

- DOE Hanford has performed pipeline video inspections, in-pipe radiological surveys, etc. Representatives from RFP may be sent to Hanford to evaluate its pipeline video process.

Compilation of existing Standard Operating Procedures (SOP) has begun. Various groups throughout the plantsite were contacted to request current operating procedures to support future efforts on OU 9. The primary areas are inspection, testing, and sampling of tanks and pipelines.

Technical Memoranda

Project	OU 9 - Original Process Waste Lines
TM#1	
TM Title	Stage 1 Field Sampling Plan
TM Status	When preparation concluded or estimated to be concluded: 09/93 Projected date of submittal to EPA/CDH: 09/93 Actual date of submittal: N/A Date when comments received: N/A

Planned Work for July

- Begin additional data compilation (review of engineering drawings, waste log books, etc.) to ascertain locations and operating history of tanks and pipelines.

Problems

None

Open Items

None

2.10 OU 10 - OTHER OUTSIDE CLOSURES

OU 10 is made up of 15 IHSSs scattered throughout the plant that consist of various hazardous waste units. Six of the IHSSs are located in the PA, two are located in the buffer zone near the present landfill, and the remaining IHSSs are located near various buildings throughout the plant. The types of wastes identified at these sites range from pondcrete/saltcrete storage and drum storage to a utilization yard with waste spills. A Final Phase I RFI/RI Work Plan is currently in preparation. The primary components of the RFI/RI Work Plan for OU 10 will be an FSP, Baseline Risk Assessment Plan (BRAP), and an EE Work Plan.

Scope of Work Changes This Period

None

Technical Approach Changes This Period

None

IAG Milestone Accomplishments

Submit Draft Phase I RFI/RI Work Plan	27 Nov 91
Submit Final Phase I RFI/RI Work Plan	01 May 92

Future IAG Milestones Through FY94

Milestone Name	IAG Date Scheduled	Extension Status	Planned Accomplishment Date
Submit Draft Phase I RFI/RI Report	25 Aug 94		2 Nov 15

June Work Activity Status

HPGe survey field activities began on June 1, 1993. Field location grids for the Property Utilization and Disposal (PU&D) Yard using the Global Positioning System (GPS) are complete. Calibration of the HPGe sensors began June 1, 1993, and all instrument calibration was completed on June 9, 1993. Reassembly of sensors onto the vehicle began after calibration was complete.

Field data collection using the HPGe in the PU&D yard began on June 11, 1993. HPGe gamma survey measurements were completed within the IHSS boundary for IHSS 170 and 174, PU&D Yard. Sample points outside the IHSS boundary were completed June 21, 1993. There was a 2-day delay in the data collection activities because the mast on the HPGe truck-mounted unit needed to be replaced. After data collection is completed in the PU&D Yard, the gamma survey crews will begin collecting radiological data on IHSSs within the 400/800 Areas for OU 10 and OU 12.

The contract negotiations for nonintrusive data collection for the IA are set for July 1, 1993.

Technical Memoranda	None
Planned Work for July	• Begin HPGe measurements in the 400/800 area. This will include gamma surveys for IHSSs in OU 10 and OU 12. • Begin nonradiation surficial soil sample collection on OU 10. This task will start with the PU&D Yard (IHSS 170 and 174).
Problems	Delays are being experienced during the HPGe survey because of equipment malfunctions and breakdowns.
Open Items	Initiation of subcontractor activities is contingent upon successful completion of subcontract negotiations and subcontract award. Delays in awarding the IA OU field work contract may push the implementation of surfical soil sampling into August 1993.

2.11 OU 11 - WEST SPRAY FIELD

The West Spray Field is located within the Rocky Flats Plant buffer zone immediately west of the plant security area. The West Spray Field was in operation from April 1982 to October 1985. During operation, excess liquids from solar evaporation ponds 207-B North and Center (contaminated ground water in the vicinity of the ponds and treated sanitary sewage effluent) were pumped periodically to the West Spray Field for spray application. The spray field boundary covers an area of approximately 105.1 acres, 38.3 of which received direct application of hazardous waste. The RFI/RI process will entail field studies to investigate the presence or absence of hazardous constituents in soil and ground water.

Scope Changes This Period

None

Technical Approach Changes This Period

None

IAG Milestone Accomplishments

Submit Draft Phase I RFI/RI Work Plan	08 Jun 90
Submit Final Phase I RFI/RI Work Plan	02 Jan 92

Future IAG Milestones Through FY94

Milestone Name	IAG Date Scheduled	Extension Status	Planned Accomplishment Date
Submit Draft Phase I RFI/RI Report	20 Sep 94		18 Apr 95

June Work Activity Status

Schedules are being developed for rescoping FY93 and FY94 work. On June 8, 1993, a meeting with the regulatory agencies and DOE was held to discuss rescoping of the OU 11 FSP, a schedule for FY93, and an extension of the September 20, 1994, milestone for submittal of the Draft Phase I RFI/RI Report. A combined Phase I and II Report will be provided in November 1994, which will replace several other milestones, including submittal of the Draft Phase II RFI/RI Work Plans and Reports (late 1995, early 1996).

The schedule for OU 11 is being accelerated to begin field work this fiscal year. Information on the NEPA categorical exclusion (CX) is being gathered and a contract is being developed. Work on a more detailed schedule and the FY94 work package continues. Progress is being made revising the FSP (data analysis and comparison is complete), and a meeting with Statistical Applications is planned to answer preliminary questions so that work can begin on the text portion of the FSP for the TM.

A meeting was held June 8, 1993, with the regulatory agencies and DOE to discuss OU 11 streamlining to accelerate the IAG schedule. The strategy will integrate the Phase II Work Plan and field work with Phase I and eliminate the IM/IRA process and move directly into the CAD/ROD process. Initial feedback was positive, and a formal proposal and schedule is under development.

Evaluation of historical data and comparisons to background continue. The result of this will be a risk evaluation for a No Further Action Justification (NFAJ) strategy, as well as an identification of data gaps for FSP development.

Technical Memoranda

Project	OU 11 - West Spray Field
TM #1 TM Title: TM Status :	Revised Field Sampling Plan and Data Quality Objectives. Under development. HHRA Technical Memoranda scheduled to begin in FY94

Planned Work for July

- Completion of a draft revised FSP combining Phase I and II is scheduled to be completed mid-August 1993.

Problems

Submittal of Draft and Final Phase I RFI/RI Reports will require milestone extensions due to assessment activity delays.

Open Items

None

2.12 OU 12 - 400/800 AREA

The 400/800 Area involves assessment and remediation of the 10 IHSSs at the 400/800 Area: Multiple Solvent Spills at the West and South Loading Dock Areas (IHSSs 116.1 and 116.2); Fiberglassing Areas North and West of Building 664 (IHSSs 120.1 and 120.2); Cooling Tower Ponds - north, east, south, and west of Building 460 (IHSSs 136.1, 1 and 36.2); Building 881 - Conversion Site(147.2); Radioactive Site - South Area (IHSS 157.2); Acid Leaks (2) (IHSS 187); and Multiple Acid Spills (IHSS 189).

Assessment will consist of preparing a Phase I RFI/RI Work Plan, which will include both an EE and an HHRA. After implementation of this Work plan, field work and sample analysis will be conducted, data will be analyzed, and the Phase I RI Report will be prepared. A phase II Investigation may be performed as necessary. An FS to determine the best methods to remediate the area will be conducted as part of the assessment.

Remediation will consist of development and execution of a Remedial Action Plan based on results obtained during the assessment phase of the project. This process includes review and approval by the regulatory agencies, followed by a ROD, release to the public, and implementation of the plan.

Scope of Work Changes This Period

None

Technical Approach Changes This Period

None

IAG Milestone Accomplishments

Submit Draft Phase I RFI/RI Work Plan	08 May 92
Submit Final Phase I RFI/RI Work Plan	05 Oct 92

Future IAG Milestones Through FY94

Milestone Name	IAG Date Scheduled	Extension Status	Planned Accomplishment Date
Submit Draft Phase I RFI/RI Report	20 Apr 94		11 Mar 99
Submit Final Phase I RFI/RI Report	15 Sep 94		17 Nov 99

June Work Activity Status

Development of the OU 12 FY94 work package continues. Development of the schedule and costs for activities during FY94 is continuing. Informal discussions have been in progress among the Project Managers for the Integrated OUs regarding the estimate of work that will be completed at the end of FY93 and IHSS intrusive activities that could be performed during FY94. Different costing and scheduling scenarios are being developed.

The statement of work (SOW) for implementation of the IA EE is being developed. One EE will be conducted for the entire IA but will support the information required in the Phase I RFI/RI Work Plans for OUs 4, 8, 9, 10, 12, 13 and 14. The implementation will be conducted by using the OU 9 EE.

Technical Memoranda

None

Planned Work for July

- Continue contract negotiations and award for integrated OU nonintrusive activities.
- Begin HPGe radiological surveys in OU 12. Obtain approval of subcontractor's HSP.

Problems

Delays are being experienced during the HPGe Survey because of equipment malfunctions and breakdowns.

Open Items

None

2.13 OU 13 - 100 AREA

Cleanup of the 100 Area involves the assessment and remediation of 14 IHSSs: Chemical Storage - North, Middle, and South Sites (IHSSs 117.1, 117.2 and 117.3); Oil Burn Pit #1 (IHSS 128); Lithium Metal Destruction Site (IHSS 134); Waste Spills (IHSS 148); Fuel Oil Tank (IHSS 152); Radioactive Site - North Area (IHSS 157.1); Radioactive Site - Building 551 (IHSS 158); Waste Peroxide Drum Burial (IHSS 169); Solvent Burning Ground (IHSS 171); Valve Vault 12 (IHSS 186); Caustic Leak (IHSS 190); and the Hydrogen Peroxide Spill (IHSS 191) and the Scrap Metal Site (IHSS 197).

Assessment will consist of preparing a Phase I RFI/RI Work plan, which will include both an EE and an HHRA. After implementation of this Work Plan, field work and sample analysis will be conducted, data will be analyzed, and the Phase I RI Report will be prepared. An FS to determine the best methods to remediate the area will be conducted as part of the assessment.

Remediation will consist of development and execution of a Remedial Action Plan based on results obtained during the assessment phase of the project. This process includes review and approval by the regulatory agencies, followed by a ROD, release to the public, and implementation of the plan.

Scope of Work Changes This Period

None

Technical Approach Changes This Period

None

IAG Milestone Accomplishments

Submit Draft Phase I RFI/RI Work Plan	15 May 92
Submit Final Phase I RFI/ RI Work Plan	12 Oct 92

Future IAG Milestones Through FY94

Milestone Name	IAG Date Scheduled	Extension Status	Planned Accomplishment Date
Submit Draft Phase I RFI/RI Report	8 Aug 94		24 Mar 99

June Work Activity Status

Comments on the *In situ* Characterization of Radionuclides were received at the Technical Review Group (TRG) meeting June 23, 1993.

A final Standard Operating Procedure (SOP) letter was completed on June 15, 1993. After discussions with the regulatory agencies, they agreed to approve the Work Plan. Minor changes and clarifications will be provided by August 1, 1993. CDH will prepare a letter to that effect.

A meeting was held to discuss the OU 13 Revised Work Plan FSP. The revised drafts of the SOPs were delivered to the regulatory agencies on June 22, 1993.

Response to CDH Comments were completed for the revised OU 13 Work Plan.

Technical Memoranda

None

Planned Work for July

- Complete changes to the Work Plan as requested by the regulatory agencies. Prepare to begin nonintrusive field investigations. Fully integrate field schedules of the IA OUs.

Problems

None

Open Items

Completion of investigations and contract award.

2.14 OU 14 - RADIOACTIVE SITES

Work at the "Radioactive Sites" involves the assessment and remediation of eight IHSSs: Radioactive Site - 700 Area Site #1 and Site #2 (IHSS 131); Radioactive Soil Burial - Building 334 Parking Lot and Soil Dump Area (IHSSs 156.1); Building 444 Parking Lot (IHSS 160) and Building 664 (IHSS 161); Radioactive Site - 700 Area Site #2 (IHSS 162); and Radioactive Sites - 800 Area which includes the Concrete Slab, Building 886 Spills, and the Building 889 Storage Pad (IHSSs 164.1, 164.2, and 164.3). In 1991, one of two Soil Dump Area IHSSs (156.2) was deleted from OU 14 and added to OU 6.

Assessment will consist of preparing a Phase I RFI/RI Work Plan, which will include both an EE and an HHRA. After implementation of this work plan, field work and sample analysis will be conducted, data will be analyzed, and the Phase I RI Report will be prepared. An FS to determine the best methods to remediate the area will be conducted as a subsequent phase to the assessment phase.

Remediation will consist of development and execution of a Remedial Action Plan based on results obtained during the assessment phase and feasibility study of the project. This process includes review and approval by EPA and CDH, followed by a ROD, release to the public, and implementation of the plan.

Scope of Work Changes This Period	None	
Technical Approach Changes This Period	None	
IAG Milestone Accomplishments	Submit Draft Phase I RFI/RI Work Plan Submit Final Phase I RFI/RI Work Plan	26 Jun 92 19 Oct 92
Future IAG Milestones Through FY94	None	
June Work Activity Status	The Strategic Review of OU 14 occurred on June 23, 1993. The Draft Comprehensive Risk Assessment Scoping Document (June 21, 1993 edition) was reviewed, and comments will be completed on July 2, 1993.	
Technical Memoranda	Current Five-Year Plan indicates TM #1, *Human Health Risk Assessment-Exposure Assessment*, and TM #2, *Human Health Risk Assessment-Modeling* are scheduled for completion in March 1994. These tasks will require rescheduling due to the integration of OUs 8, 9, 10, 12, 13, and 14. Currently, only nonintrusive RI field work is scheduled for OU 14 in FY94. Preparation of the TMs will not begin until FY95.	

Planned Work for July	• Continue review and subsequent approval of the HSP for the integrated OU field work. • Contract negotiations are scheduled for July 1 and July 9, 1993.
Problems	None
Open Items	None

2.15 OU 15 - INSIDE BUILDING CLOSURES

OU 15 is composed of seven IHSSs: IHSS 178, Building 881 - Drum Storage Area; IHSS 179, Building 865 - Drum Storage Area; IHSS 180, Building 883 - Drum Storage Area; IHSS 204, RCRA Unit 45 - Original Uranium Chip Roaster; IHSS 211, RCRA Unit 26, Building 881 - Drum Storage Area; IHSS 212, RCRA Unit 63, Building 374 Drum Storage Area; and IHSS 217, RCRA Unit 32, Building 881 - Cyanide Bench Scale Treatment. The seven IHSSs currently have interim status under RCRA.

Closure Plans for the IHSSs were submitted to CDH during 1988 and 1989. The IHSSs were also included within the IAG to undergo a RCRA Facility Investigation/Remedial Investigation (RFI/RI). During scoping meetings for preparation of the Phase I RFI/RI Work Plan for Operable Unit No. 15 conducted between EPA, CDH, and DOE during April 1992, the Closure Plan and RFI/RI Processes were combined. In effect, Clean Closure Performance Standard (6 CCR 1007-3, Part 265.111) will serve as the Applicable or Relevant and Appropriate Requirements for the OU 15 RFI/RI inside buildings and Closure Plans will no longer be prepared. The Public comment period required for the Closure Plan process will be fulfilled through the Interim Measures/Interim Remedial Actions (IM/IRA) process of the IAG.

Drums containing solids and liquids were stored at the OU 15 IHSSs. Types of waste included oils, coolants and solvents containing chlorinated hydrocarbons (RCRA F001 and F002 wastes), and waste paints and waste metals contaminated with solvents. Hazardous constituents include chlorinated solvents, beryllium, and uranium. The major activity proposed is characterization of contamination associated with the OU 15 IHSSs both inside and outside buildings and, if applicable, decontamination of the concrete floors at the indoor facilities and remediation of contamination outside buildings.

During April 1992, IHSS 215, Unit 55.13-Tank T-40, was deleted from OU 15 and added to OU 9 as part of a IHSS realignment pursuant to Part 32, Paragraph 191 (Additional Work or Modification to Work) of the IAG. This change was recommended by DOE in the OU 9 Phase I RFI/RI Work Plan approved by CDH and EPA in April 1992. Similarly, IHSS 212, RCRA Unit 63 was removed from the OU 15 RFI/RI process because it is currently active as a Drum Storage Area and has been included in the Rocky Flats Plant RCRA Part B TRU Mixed Waste permit application.

Scope of Work Changes This Period	None	
Technical Approach Changes This Period	None	
IAG Milestone Accomplishments	Submit Draft Phase I RFI/RI Work Plan	01 Jun 92
	Submit Final Phase I RFI/RI Work Plan	26 Oct 92

Future IAG Milestones Through FY94

Milestone Name	IAG Date Scheduled	Extension Status	Planned Accomplishment Date
Submit Draft Phase I RFI/RI Report	1 Aug 94		1 Aug 94

June Work Activity Status

The critical path for continuing with the performance of OU 15 field work includes completion of Integrated Work Control Programs (IWCPs) for individual buildings (i.e., 881, 865, 883, and 447). Completion of the IWCPs is dependent upon approval of the SOP for collection of floor/equipment rinsate samples; an approved copy must be included within the IWCPs. DOE approval of the SOP was obtained.

Subcontract modification for coordination of Transition work and EG&G Radiation Protection Technicians (RPTs) was completed. Prior to the subcontractors proceeding with coordination of Transition work and EG&G RPTs, subcontract modification had to be completed. The Technical Evaluation of the subcontractors modified proposal was completed on June 21, 1993.

Technical Memoranda

Preparation of the Field Sampling Plan TM and the Human Health Risk Assessment TM is not anticipated to begin until FY94.

Planned Work for July

- Work will continue to obtain necessary permits and document approvals to begin OU 15 field work.

Problems

The June 18, 1993, Internal Work Package Milestone for beginning OU 15 field work was not met. This milestone will not be met until all permitting requirements and Quality Assurance (QA) requirements are met. This issue may cause the delay of the Phase I RFI/RI Report for OU 15, which is an IAG milestone scheduled for August 1, 1994.

Open Items

Fulfill QA and permitting requirements.

2.16 OU 16 - LOW PRIORITY SITES

This assessment activity consists of preparing a "No Further Action Justification Document" for 7 IHSSs: Solvent Spill, Antifreeze Discharge, Steam Condensate Leaks (400 and 700 areas), Nickel Carbonyl Disposal, Water Treatment Plant Backwash Pond, and Scrap Metal Sites. In addition, the draft document must be reviewed, comments resolved, and the draft finalized.

Scope of Work Changes This Period

None

Technical Approach Changes This Period

None

IAG Milestone Accomplishments

Submit Draft NFAJ Document	04 Mar 92
Submit Final NFAJ Document	30 July 92
Submit Revised Final NFAJ Document	16 Oct 92

Future IAG Milestones Through FY94

None

June Work Activity Status

The Strategic Review of OU 16 occurred June 23, 1993.

The Records Management (RM) group is initiating an Administrative Record (AR) completeness check for documents associated with OU 16. The record check started with letters from RM to EG&G Associate General Managers, DOE, and the regulatory agencies requesting cooperation in assembling all related documents. Ten documents were processed in preparation for the ROD for OU 16. A newspaper announcement was prepared for the release of the OU 16 ROD. The ROD schedule is as follows: (1) Issue Proposed Plan/Draft RCRA Permit Modification (PP/DRPM) to public - date to be determined; (2) Open for review/comment - July 12, 1993; (3) Public meeting - August 12, 1993; (4) Close review/comments- September 10, 1993.

Technical Memoranda

None

Planned Work for July

- ROD schedule will be revised with concurrence among the regulatory agencies and DOE. The schedule revision will allow for additional time to review and finalize the draft PP/DRPM before issuing the document for public review and comment.

Problems

The ADS and Five-Year Plan for OU 16 indicate no available funding for FY94 because the submittal of the NFAJ document was the final project task.

Open Items

The administrative ROD process will extend into FY94; a work package was drafted to reflect the scope of work and resources required to complete the planned activities.

2.17 SITEWIDE ACTIVITIES

Sitewide activities include several tasks that encompass a wide variety of plans, procedures, reports, studies, and other activities required by the IAG and that apply to RFP environmental restoration activities in general. The activities include, but are not limited to, the HSP, a Sampling and Analysis Plan, a Plan for Prevention of Contaminant Dispersion, the Community Relations Plan, the Discharge Limits for Radionuclides Work Plan, Treatability Study deliverables, the Background Study Plan, Administrative Record, State Response (support for CDH oversight), Historical Release Report, Operations Management, Decontamination Facilities, contractor yard support, ER Waste handling facilities, geologic characterization, hydrogeologic characterization, and ground water monitoring.

Scope of Work Changes This Period

None

Technical Approach Changes This Period

None

IAG Milestone Accomplishments

Submit Draft Background Study Report (Water)	15 Dec 89
Submit Draft Background Study Report (Soils)	15 Dec 89
Submit Draft Community Survey Plan	23 Jan 90
Submit Final Community Survey Plan	22 Mar 90
Submit Draft Health and Safety Plan	15 Aug 90
Submit Draft Quality Assurance Project Plan	29 Aug 90
Submit Draft Standard Operating Procedures	29 Aug 90
Submit Draft Plan for Prevention of Contaminant Dispersion	19 Sep 90
Submit Draft Treatability Study Plan	21 Sep 90
Submit Draft Community Relations Plan	01 Nov 90
Submit Final Health and Safety Plan	12 Nov 90
Submit Revised Background Study Report	21 Dec 90
Submit Final Community Relations Plan	22 Jan 91
Submit Final Quality Assurance Project Plan	01 Mar 91
Submit Final Standard Operating Procedures	01 Mar 91
Submit Draft Radionuclides Discharge Limits Plan	05 Apr 91
Submit Community Relations Plan Responsiveness Summary	21 Jun 91
Submit Final Treatability Study Plan	03 Jun 91
Submit Final Plan for Prevention of Contaminant Dispersion	22 Jul 91
Submit Final Plan Discharge Limits Radionuclides	16 Sep 91
Submit Final PPCD and Responsiveness Summary	25 Nov 91
Submit Draft Historical Release Report	08 Jan 92
Submit Responsiveness Summary for DLRP	31 Jan 92
Submit Final Historical Release Report	03 Jun 92
Submit Annual Treatability Study Report	08 Mar 93

Future IAG Milestones Through FY94

None

June Work Activity Status

Sitewide Treatability Studies

Meetings - A Soils Decontamination Workshop was held June 16 and 17, 1993, in Gatlinburg, TN. The workshop was planned by the Soil Decontamination Committee sponsored by the Office of Technology Development.

The quarterly review meeting for the Sitewide Treatability Studies program was held June 29, 1993, in Broomfield. This review allowed the regulatory agencies, DOE, and EG&G to discuss the Sitewide program.

RFP personnel attended the Rocky Mountain Quality Conference. Issues related to Total Quality Management (TQM) were addressed during the conference. The conference proceedings are available to interested parties.

Annual Report - The Sitewide Treatability Studies annual report is an IAG milestone. The annual report includes a summary of the status of each of the sitewide projects, a literature review of new and emerging technologies, and a summary of other relevant environmental projects at RFP. EG&G delivered the final report (FY92) to the regulatory agencies for DOE on March 8, 1993.

RFP has begun work on the procurement package for the preparation of the FY93 Annual report. The Statement of Work (SOW) has been drafted and reviewed internally. The procurement package was completed and submitted to Procurement in June 1993.

Colloid Polishing Filter Method (CPFM) (Techtran) - This process uses a proprietary chemical complexing agent to remove heavy metals and/or radionuclides contaminants from waste water or ground water. The contaminants are removed from the water by precipitation and filtration. Ultimately, the contaminants are contained in a dried filter cake and the treated water is returned to the environment. Preliminary tests at RFP in 1991 were favorable. EPA's Risk Reduction Engineering Laboratory (Cincinnati) is interested in supporting a demonstration of this technology at RFP through their Superfund Innovative Technology Evaluation (SITE) program.

The EPA SITE project will have highest priority in the Sitewide Treatability Program. Every effort will be made to have this project completed by the end of August 1993. EPA has promised to fund the study, but some period of time may elapse before its funding arrives. In light of this guidance, plans are being made to divert funds from other tasks to begin

the necessary preparation work for the project. This will allow the preparation for the SITE project to begin in a timely fashion.

Community Relations - The TRG monthly meeting was held June 23, 1993, and included discussions on the Draft Compendium of In Situ Radiological Methods and Applications at the RFP.

Community Relations conducted interviews to include in a new water management video.

Industrial Area/ Interim Measure/ Interim Remedial Action Plan (IA/ IM/IRAP) - Work is progressing on the IA/IRAP that includes OUs 8, 9, 10, 12, 13, and 14. The project is being redefined with a goal of accelerated cleanup. Identification of overlaps in IHSSs are in progress. Nonintrusive field work may begin in FY94 with concurrence from the regulatory agencies and DOE.

A meeting was held on June 16, 1993, with the regulatory agencies. The purpose of the meeting was to provide scope definition for the IA/IRAP. The regulatory agencies suggested that an IM/IRAP for the IA may take the form of an augmented monitoring system that would also monitor the footing drains and identify subsurface structures that may alter ground water flow. It was also suggested that the IM/IRAP provide an administrative mechanism for disposition of incidental waters found in footing drains and sumps. EG&G will develop a scope and schedule. Follow-up meetings are planned for July 7, 1993, and July 19, 1993.

Administrative Record (AR) - Collection of final AR documents for OU 16 continues. To date, few documents exist that are not already in the AR file. The dates for the ROD process remain:

- Date to be determined - Issue to Public
- 7/12/93 - Open for Public Review and Comment
- 8/12/93 - Public Meeting
- 9/10/93 - Close Public Review and Comment

Planned Work for July

- Continue work on the Sitewide Treatability Studies including the Colloid Polishing Filter Method (Techtran) associated with the SITE program.
- Continue updates to the Administrative Record.
- A scope and schedule for the IM/IRAP will be developed. Follow-up meetings are planned for July 7, 1993, and July 19, 1993.
- Continue Community Relations Activities.

Problems	None
Open Items	None

SECTION 3. ROUTINE ENVIRONMENTAL MONITORING

The following generalized sampling schedule for Routine Environmental Monitoring is provided as requested in Section 210 of the IAG. Detailed quarterly monitoring schedules are prepared in advance and are available to EPA and CDH upon request from the Environmental Management Department and EG&G Rocky Flats, Inc. The schedules are lengthy; therefore, they are not reproduced here. An EPA- or State-authorized representative may make arrangements to observe field work and to obtain split or duplicate samples.

3.1 SURFACE WATER AND SEDIMENTS

- Each of the Surface Water Stations (approximately 20 stations) is sampled quarterly.
- Each of the Sediment Stations (approximately 10 stations) is sampled quarterly.
- Each surface water and sediment sample is analyzed for the following parameters:

CLP TCL VOA	Radionuclides
Metals CLP TAL & Non-TAL	Temperature
Field Parameters	TDS/TSS
Specific Conductivity	pH
Dissolved Oxygen (DO)	Nutrients
Major Anions	

- Additionally, sediment samples are analyzed for CLP Semi VOAs, CLP Pesticides/PCBs and Herbicides-619.

3.2 SOILS

- Each of the Soil Stations (located at 1- and 2-mile radii from the plant center) is sampled annually.
- Each soil sample is analyzed for Pu and Am.

3.3 GROUND WATER

A total of 410 ground water stations, including alluvial wells, bedrock wells, and pre-1986 wells, are sampled quarterly. Approximately one-third of the wells are monitored monthly for water levels.

Each ground water sample is analyzed for CLP, TCL, VOAs, TAL, and metals, as well as the following parameters:

Radiochemical Parameters	Inorganic Parameters	Field Parameters
Gross Alpha	Nitrate/Nitrite	DO
Gross Beta	Total Phosphorous	Specific Conductivity
Plutonium	Ortho-Phosphate	Temperature
Americium	Ammonia	Turbidity
Strontium	TDS	pH
Tritium	Fluorine	
Uranium	Sulfate	
Cesium	Carbonate	
	Bicarbonate	

Radiochemical Parameters	Inorganic Parameters	Field Parameters
	TSS	
	Total CLP Metals & additional metals	
	Dissolved CLP & additional metals	
	Cyanide	
	CLP Volatile Organic Compounds	

SECTION 4. CONTRACTOR/SUBCONTRACTOR IDENTIFICATION

Contractors and subcontractors being used on the RFP ER Program and the work they are performing are identified on the following list as required by paragraph 13 of the IAG.

OU	Project	Subcontractor	Sub-Subcontractor	Work Description	Start Date
1	Assessment	Ebasco	Dames & Moore S.M. Stoller	OU 1 RFI/RI field work (drilling, well development/completion, sampling) and RI report and CMS/FS report	Apr 91
1	Assessment	Roy F. Weston		Revise RI Report, respond to agency comments	Feb 93
1	Remediation	Resource Tech. Group, Inc. (RTG)	CH2MHill/OMT	B-891 Treatment System Operations	
2	Assessment	Woodward-Clyde		OU 2 RFI/RI Work Plan (alluvial and bedrock) and RI field work (drilling, well completion/development)	Sep 90
2	Assessment	Ebasco	S.M. Stoller	Environmental Evaluation	Feb 91
	Assessment	Woodward-Clyde	Layne	OU 2 RFI/RI Work Plan (bedrock), surficial soils	Mar 93
2	Remediation	Reider (RFG in April)		Installation and operation of the water treatment system for South Walnut Creek Phase of OU 2 IRA	Jan 91
3	Assessment	IT Corporation	CH2M Hill	OU 3 Field Work and RI Report	Apr 92
3	Assessment	MRI		Wind Tunnel/Soil Resuspension Study	Aug 92
4	Remediation	HNUS	Halliburton Spec.	Process "C" and "A/B" Pond waste streams to a certifiable form of final disposition	Sep 91
4	Assessment	Applied Environment	Gerashby & Miller Wright Water, Stoller Doty & Associates	Implement the Phase I RFI/RI Work Plan, includes drilling, sampling radiation surveys, etc.	Aug 92
4	Assessment	Dames & Moore	UE&C	Management consulting to implement DOE Order 4700.1 and 4700.5	Jan 93

OU	Project	Subcontractor	Sub-Subcontractor	Work Description	Start Date
5	Assessment	ASI	Dames & Moore Blackhawk GeosicenceWalsh & Assoc. Fugro Geosciences Lagne Envir. Service Utility Mgmt. Service S.M. Stoller Adv. Terra Testing	Implementation of OU 5 Work Plan (excluding EE)	Jun 92
5	Assessment	S.M. Stoller		Implementation of EE section of OU 5 Work Plan	Sep 92
6	Assessment	Woodward-Clyde	Lane, Ogden Geo Environmental	OU 6 RFI/RI Work Plan and Quality Assurance Addendum	Feb 90
6	Assessment	S.M. Stoller		EE	Sep 92
7	Assessment	S.M. Stoller	Walsh & Assoc.	OU 7 RFI/RI Work Plan including EE Plan and QA Addendum	Apr 90
15	Assessment	S.M. Stoller		OU 15 RFI/RI Work Plan	May 92
15	Assessment	ERM-Rocky Mtn.	G.S. Miller, Inc.	Implementation of the RFI/RI Work Plan	Mar 93
SW	HRR	IT Corporation	Doty & Assoc.	Prepare HRR	Feb 91
SW	Adm. Record	QuantaLex		Maintain IAG Administrative Record	Oct 90
SW	Geo. Char.	Jacobs Eng.		Well Abandonment and Replacement	Mar 93
SW	Geo. Char.	Colorado State		Support M.S. thesis of Structural Geology, of Front Range Area Near RFP	Nov 91
SW	Geo. Char.	S.M. Stoller		Prepare 1992 Annual RCRA Report and Addendum	Jan 93
SW	Geo. Char.	Colorado School of Mines		Masters level training program in ES and Engineering	Aug 92 Dec 94
SW	Geo. Char.	Woodward-Clyde		Support for the SSWMS	Feb 93
SW	Gio. Char.	CSU		Sequential Extraction	April 92
SW	Geo. Char.	CU		Soil Monitoring Vadose Zone	Jun 92
SW	Geo. Char.	S.M. Stoller		Spatial Analysis/Computer Support	Mar 93
SW	Geo. Char.	Woodward Clyde	SAIC/Wright Water		Jan 93
SW	Monitoring	IT Corporation		Analytical Services for ground water, surface water, and sediment	Jul 90

OU	Project	Subcontractor	Sub-Subcontractor	Work Description	Start Date
SW	QA	SAIC		Develop and implement QA program and field operations oversight	Dec 90
PM	Support	S.M. Stoller		Program Management Support	Oct 92
PM	QA Support	SAIC		Provide QA/QC support to ER Program	Nov 92

ACRONYMS

ADS	Activity Data Sheet
AIP	Agreement In Principle
ARAR	Applicable or Relevant and Appropriate Requirements
BAT	Best Available Technology
BCP	Baseline Change Proposal
BRAP	Baseline Risk Assessment Plan
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CHWA	Colorado Hazardous Waste Act
CMS	Corrective Measures Study
COC	Contaminant Of Concern
CPT	Cone Penetrometer Testing
CRP	Community Relations Plan
CSU	Colorado State University
D&D	Decontamination & Decommissioning
DCN	Document Change Notice
DLRP	Discharge Limits Radionuclides Plan
DOE	Department of Energy
DQO	Data Quality Objectives
E&WM	Environmental and Waste Management
EA	Environmental Assessment
EE	Environmental Evaluation
EM	Environmental Management
EPA	Environmental Protection Agency
ER	Environmental Restoration
ERA	Ecological Risk Assessment
FIDLER	Field Instrument for Detection of Low Energy Radiation
FS	Feasibility Study
FSP	Field Sampling Plan
FTU	Field Treatability Unit
FYP	Five-Year Plan
GAC	Granular Activated Carbon
GPR	Ground Penetrating Radar
H&S	Health and Safety
H&SP	Health and Safety Plan
HAP	Health Advisory Panel
HHRA	Human Health Risk Assessment
HPGe	High Purity Germanium
HRR	Historical Release Report
IAG	Interagency Agreement
IHSS	Individual Hazardous Substance Site
IM	Interim Measure
IRA	Interim Remedial Action
IRAP	Interim Remedial Action Plan
ITS	Interceptor Trench System
IWCP	Integrated Work Control Package
IX	Ion Exchange
LATO	Los Alamos Technology Office
LL	Low-level
LLMW	Low-level Mixed Waste

MTS	Master Task Subcontract
MSVEU	Mobile Soil Vapor Extraction Unit
NEPA	National Environmental Policy Act
NFAJ	No Further Action Justification
NTS	Nevada Test Site
O&M	Operations and Management
OPWL	Original Process Waste Line
OTD	Office of Technology Development
OU	Operable Unit
PA	Protected Area
ppb	Parts per billion
PCCB	Plant Change Control Board
PCP	Process Control Plan
PAC	Potential Area of Concern
PPCD	Plan for Prevention of Contaminant Dispersion
PPE	Personal Protective Equipment
PU&D	Property Utilization and Disposal
QA	Quality Assurance
QAPP	Quality Assurance Project Plan
QP	Quality Plan
RAGS	Risk Assessment Guidance for Superfund
RCA	Radiological Control Area
RCRA	Resource Conservation and Recovery Act
RFEDS	Rocky Flats Environmental Database System
RFI	RCRA Facilities Investigation
RFP	Rocky Flats Plant
RI	Remedial Investigation
ROD	Record of Decision
RPT	Radiological Protection Technician
SAR	Safety Analysis Report
SID	South Interceptor Ditch
SMO	Sample Management Office
SOP	Standard Operating Procedure
SOW	Statement of Work
SPPO	Solar Ponds Program Office
TCE	Trichloroethene
TDS	Total Dissolved Solids
TM	Technical Memorandum
TRG	Technical Review Group
TS	Treatability Study
TSS	Total Suspended Solids
UBC	Under Building Contaminations
USFWS	United States Fish and Wildlife Service
UV	Ultraviolet
VOA	Volatile Organic Analyte
VOC	Volatile Organic Compound
WBS	Work Breakdown Structure
WS	Waste Solidification